CITY OF WOODLAND

Data Base

1988

ACKNOWLEDGEMENTS

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LIST OF DATA BASE UPDATES

DATE	SECTION TITLE	SECTION	NUMBER	PREPARER
NOVEMBER 1988	ALL SECTIONS	-----	-----	CITY OF WOODLAND/ QUAD CONSULTANTS

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Introduction

1. INTRODUCTION

This Data Base describes the setting and many related facts for the City of Woodland. It is to be utilized in preparing all development plans and environmental documents related to the City of Woodland planning area.

The Woodland Data Base is intended to be updated as new information and data becomes available. The updated portion of the Data Base will be used as the setting section for all subsequent environmental documentation and planning studies. The Data Base is intended to be a working document for the City of Woodland.

FORMAT:

The table of contents is divided into 27 chapters. Each chapter is assigned a major topic concerning data about the City of Woodland. Each topic includes sub-topics and minor divisions. A reference source page and accessory appendices included at the end of appropriate chapters.

EXCLUSIONS

General Plan law and guidlelines reguires discssion of certain land use issues. Perusant to the "shoe fits" doctrine of general plan comprehensiveness, the following items have been excluded from discussion within this plan due to their inapplicability to Woodland. These particular items are not found withing the Woodland General Plan area and are therefore not discussed.

- o Identification of existing Timberland Preserve Zone lands. Description of the location, type, amount, and ownership of land and timber resources subject to timberland preserve zoning.
- o Inventory of forest lands, range land and grazing lands.
- o Delineation of the boundaries and description of unique water resources (e.g., salt-water and fresh-water marshes, wild rivers and streams, lakes).
- o Description of the location and extent of geothermal resources.
- o Identification of the type, location, extent, and quality of mineral resources, including oil.
- o Inventory of scenic "viewsheds" and points of interest.
- o Data on areas subject to inundation as a result of dam failure.
- o Identification of areas subject to flooding as a result of tidal action occurring in conjunction with river and stream runoff.
- o Local Coastal Plan provsions including a review of coastal beaches.

- The location, acquisition, development, and management of public and private parks and recreational areas, including access to lakeshores, beaches, rivers, and streams.

- Inventory of forest resources.

- Analysis of the conservation, development and utilization of the hydraulic forces of water including designation of hydroelectric power generation sites.

- Analysis of the conservation, development and utilization of harbors.

- Inventory of existing and proposed areas for ecology and other scientific study.

- Trails including banks of rivers and streams that link between major recreation and open space areas.

- Protection of water reservoirs.

- Potential of tsunami, seiche and seismically induced dam failure.

- Other geological hazards do not exist within the Woodland area.

City of Woodland History

2. CITY HISTORY

2.A GENERAL

Woodland today is still largely a "City of Homes" as it was known in the early 1900's. Factors contributing to Woodland's prosperity have been a rich soil and good climatic conditions, the relocation of the County Seat to Woodland and the establishment of good transportation systems. A brief history of Woodland helps us to understand the natural and man-made influences that created the unique character of the City.

In the winter of 1853, Henry Wyckoff settled in a dense grove of oak trees and opened a small store in Yolo City (now Woodland). Within a couple of years other businesses where established in the area. The favorable soil and climate attracted other settlers who found farming a profitable venture.

Among the early settlers was Major F.S. Freeman, who also opened a store. Later Major Freeman offered free lots to persons who would clear the land and build a home. Before long the settlement of Yolo City grew around what is now Main Street. In 1858, Major Freeman gained permission for a Federal Post Office to be built in the town and Yolo City was renamed Woodland.

In 1862, by a vote of 968 to 778, the Yolo County Seat was transferred from Washington (today known as Broderick) to Woodland. The courthouse was first located in Henry Wyckoff's store. In 1862, a combination courthouse and jail was built. This was damaged by an earthquake in 1902. A new courthouse was completed in 1918 and is still used for County business and the Superior Courts.

On June 25, 1863, Major Freeman recorded the first plat of the City. The northern portion of present-day Woodland was divided into blocks, lots and streets and this plat was the basis for future locations of buildings and streets. Sixth Street was designated as the eastern boundary; College Street was the western; North Street was the northern border and South Street (now Main Street) was the southern City limit. By 1870, the population of Woodland was estimated to be 1,600 residents but most of the oaks for which the town was named had disappeared. The City was incorporated in 1871.

In the late 1860's, the California Pacific Railroad Company constructed a rail line between Davisville and Marysville with a Woodland station in the vicinity of College Street and Lincoln Avenue. The rail line was later moved to its present location along East Street and became a part of the Southern Pacific Railroad System. The Sacramento Northern Electric Railroad Company began direct freight and passenger service to Sacramento from Woodland in 1912. In the 1920's, this line was acquired by Western Pacific. The depot was located at the corner of Main and Second Streets until it was demolished in the 1960's. The building was replicated in 1987. Today, both the Southern Pacific and the Sacramento Northern provide freight service to the industrial areas of Woodland.

Wood was the primary building material until approximately 1870. Two local brickyards began production of a soft brick in the mid-1860's. This resulted in a changeover of major building materials from lumber to brick as builders found it less expensive to use than imported lumber.

The period between 1880-1890 saw the initiation of City and utility improvements. The construction of an electric lighting plant and the installation of a locally-run telephone system occurred during this decade. Five gas lights were installed along Main Street and an official grade for streets and sidewalks was adopted to provide for level streets within the City. A contract was negotiated with R.H. Beamer for the construction of a municipal building to be used for City offices, the Fire Department and a jail. The City Hall, located at First and Court Streets, was completed in 1891. The building was reconstructed in 1936, enlarged in 1960 and 1975, and still serves the City.

The City of Woodland acquired the water works system and built a sewer system in 1891. In the mid-1950's, sewer capacity was reached. This resulted in a moratorium on all new building from 1957 to 1958. A bond issue was passed in 1959 which extended the sanitary and storm sewer system to serve the southern portion of the City. A similar bond issue was approved in 1963 to serve the northern part of Woodland.

The 1890's began with the worst storm the City had experienced in 30 years. This started a series of misfortunes. In 1892, a fire destroyed two business blocks, including the Opera House and the Exchange Hotel and one block of homes. The property loss amounted to $200,000. In the early 1890's some local businessmen felt a streetcar line along Main Street to carry those who disliked the muddy street would be profitable. The system was one mile long and the streetcars were drawn by horses. The operation failed in 1896. A depression occurred between 1894 and 1896 causing other business failures and bringing the start of a railroad strike. This depression caused a decline in population from 4,523 to 4,392. By 1910, the population had climbed to 4,589.

By 1854, the Union Church building had been built in the cemetery. Little is known about this building except that it served as a meeting place for several churches and schools. The Christian Church, which organized in 1854, met in the Union Church until they dedicated the first church within the City Limits in 1866. A Roman Catholic Church was consecrated in 1869.

The Union Church building also served from 1855 to 1858 as the first public school. In 1858, a permanent school was built near the Southern Pacific Depot. The upper story of the school served as the Masonic Hall. In 1871, a new six-room brick school was started where Freeman Park now stands. The high school was located in the Hesperian College building until 1912 when a bond issue was passed to build a new high school. The Holy Rosary Academy was founded in 1884 and served as a boarding and a day school for girls in the primary and secondary grades.

Founders of the Christian Church also established Hesperian College in 1860. Located on College Street, it was a highly regarded institution of higher learning. The school, today known as Chapman College, is located in Southern California.

The first City Library in Yolo County was built with funds from the Carnegie Foundation. The Library, which was privately organized in 1874, was given to the City in 1891. The present library, designed by William H. Weeks, was built in 1905 with Carnegie Funds, with subsequent additions in 1915, 1927 and 1988.

The Shakespeare Club of Woodland was organized in 1885 to study Shakespearian plays and the development of the drama. This women's club is the second oldest women's club in the State.

During 1896, a new Opera House was opened on the same site as the one which had been destroyed by fire in 1892. This turn-of-the-century valley theater was the source of great local pride and became the center for recreation and culture in the Woodland area. However, after the filing of a personal injury suit in 1913, the Opera House was closed and remained unused until it was purchased in 1971 by the Yolo County Historical Society. It is now a part of the State Park System and is maintained and operated by the City of Woodland through the Opera House Board of Directors. Restoration is now almost complete.

The early 1900's were years of unusual building activity. In 1916, a building to house both the Bank of Woodland and the Yolo County Savings Bank was built at the northwest corner of College and Main Streets. This building with its Italian marble entry still stands but now houses a restaurant. Between 1909 and 1911 it has been estimated that about 200 homes were built in Woodland. A number of commercial and community buildings were also built. The Roth Building and St. Luke's Episcopal Church were constructed. The Physician's Building at Main and First Streets and the First National Bank Building were remodeled.

Wm. H. Weeks, one of the foremost architects of the time, as described in the article on page 2-5, designed a number of buildings in Woodland. These included:

1. Bank of Woodland and Yolo County Savings Bank, 435 Main Street, 1916
2. Carnegie Library, 1905, Addition, 1915
3. County Hospital, 1920
4. County Jail, 1914
5. Dingle School, 1915
6. Elks Lodge, 500 Bush Street, 1926
7. High School, 1913-14, Auditorium and Gymnasium, 1925
   Manual Arts Building, 1923
8. Hotel Woodland, 1928
9. J.I. McConnell Residence - 705 First Street, 1919
10. Old Maxwell School - 175 Walnut Street, 1915
11. Porter Building - 511 Main Street, 1915
12. Yolo County Courthouse, 1918
13. Yolo Fliers Country Club Clubhouse, 1920

He also designed a number of residences.

The Woodland Sanitarium, organized in 1911 by a nurse, was Woodland's first hospital. Physicians expanded the facility and by 1923, the Woodland Clinic Hospital was a functioning hospital. The Woodland Clinic Medical Group relinquished its proprietary interest in the hospital in the 1960's and the Woodland Memorial Hospital became the City's first nonprofit community hospital.

Yolo General Hospital, the County Hospital designed by Wm. H. Weeks in 1920, is still in operation and is unique in that it is one of only three California county hospitals that accepts private, paying patients.

Woodland has benefitted greatly from the success of the agricultural industry by serving as a center for banking, shops, education and in some instances by housing farmers and their help. Another important impact on the community and industry has been the invention and manufacturing of farming equipment. Local inventions included the centrifugal pump in the late 1800's and the Marvin Landplane in 1936 (Knights Landing). The Best Tractor was developed by the Best family who lived in Woodland although the tractor was actually manufactured in Oakland. Today several farm equipment dealers are located within Woodland and provide employment and tax revenues for the City while serving the outlying farms.

Irrigation was and still is a major contributor to the agricultural success of the area. The first irrigation canal was developed by James Moore in 1856 who owned exclusive water rights to Cache Creek which lies north of Woodland. Irrigation water today is provided by wells and the Yolo County Flood Control and Water Conservation District canals.

Money earned in the gold fields of California financed the purchase of much of the farm land around Woodland. A variety of crops were grown. These included: tobacco, peanuts, grapes, rice, sugar beets, various grains and row crops. Several wineries were located in the County producing wine, vinegar and brandy. The livestock industry also had an important role in the area. The Woodland Creamery was organized in the 1880's by citizens who recognized the local need for dairy products.

The opportunity for farming brought many nationalities to the area. The native Patwin Indians provided the first labor on the farms. They were replaced by Chinese laborers who came to Woodland in the 1860's during the building of the transcontinental railroads. After work on the railroads stopped, the Chinese labored on levee construction, fence building and truck farming. Some Chinese settled in Woodland and became prominent in the culinary and laundry services. Dead Cat Alley became the site of the Chinese community's homes and businesses. By the early 1900's, employment opportunities for the Chinese began to disappear and the Chinese population declined.

The Japanese were first brought to Byron Jackson's Yolando Ranch in the late 19th century as farm laborers, but eventually both Japanese men and women were employed as laborers throughout the county. Some Japanese started businesses in town such as barber shops and secondhand stores but a major handicap to the

WILLIAM H. WEEKS

ARCHITECT OF THE PLAIN CITIZEN

By Betty Lewis

ARCHITECT WILLIAM H. WEEKS 1864-1936

Mr. Weeks' plans for the new $90.000 High School have been unanimously accepted. He competed with the best school architects in the State and to have his plans accepted above the others is certainly highly complimentary to his ability. He also has under construction school buildings at Gilroy. $40.000; Santa Rosa. $85.000; Crow's Landing. $35.000; and at five other places. He also is the architect of four libraries and seven hotels now building. It is needless to say that Mr. Weeks is leading a rather strenuous life. *Watsonville Register. 1916*

Strenuous life indeed! William Weeks left his mark in prolific display on towns throughout Northern and Central California; maintained offices, through the years, in five different cities; and increased his office staff until, at one time, he had more than 30 people working with him, including his brother Hammond, his son Harold and such outstanding architects as Robert Orr and Ralph Wyckoff. Weeks still remains one of the most undiscovered architects of his time despite such buildings as the Santa Cruz Casino and Natatorium, State Polytechnic School at San Luis Obispo, Piedmont High School, McDougall Building in Salinas and the Red Bluff Catholic Church.

Born in January 18, 1864 in Charlottetown, Prince Edward Island, Will Weeks was soon to follow in his father's footsteps as a builder. The family lived in Denver for awhile, where Will received his architectural training at the Berger Institute. After moving to Wichita, Kansas, where he and his father were in business together, he met his future bride — Maggie Haymaker of Indiana. They were married in 1891 and, after a brief time in Tacoma, Washington, Will, his bride and other members of the Weeks family moved on to Oakland, California. Here, as an active member of the Christian Church in 1892, Weeks was first brought to Watsonville to design the Christian Church at Main and East Lake. In 1894, engaged in the designing and construction of Watsonville's first High School building, Weeks opened an office in that city and soon after moved his family there. 1897 saw him opening a branch office in Salinas, out of which he designed many of the buildings and homes in the fledgling town of Spreckels, just south of Salinas.

Remaining in Watsonville until 1911, Weeks created a staggering number of designs in that city. The first house he designed was for Judge Julius Lee in 1894 — a Queen Anne located just one and a half blocks from the Main Street, on land that cost Mr. Lee $10 in gold coin. Interesting features of the house are two plaster-molded ladies gracing either side of the front door. These almost life-size reliefs, in their flowing white gowns, invite you to enter through the lovely oak door with its 13 squares of beveled glass. Other structures still standing in Watsonville, attesting to Weeks' designing ability, are the St. Patrick's Church, the Lettunich Building, Resetar Hotel, Appelton Hotel, Mintie White School, Linscott School, Green Valley School (now a home), the bandstand in the Plaza, Christian Church (the third he designed in Watsonville) and the Appleton Theatre (now used as a wherehouse), plus, many, many homes throughout the Pajaro Valley.

In 1905, Weeks opened an office in San Francisco in the new Flood Building and was instrumental in rebuilding the city after the 1906 earthquake and fire. During this time period, he also was very active in designing Carnegie Libraries — most of the Carnegie Libraries in Northern California, it's said.

After leaving the Pajaro Valley, Weeks and his family moved to Palo Alto, then on to Oakland. He still retained a summer home in Aromas, a small community near Watsonville and the family often returned there to spend summer vacations over the years.

The May issue of *Architect & Engineer*, 1915, was devoted to the work of William H. Weeks, filled with pictures of buildings he designed:

> Mr. Weeks is essentially the architect of the plain citizen — the average owner, whether he has individual or collective corporate existence. For such owners architectural problems are direct and simple.

Weeks designed this residence for Dr. C. H. Weaver in Gilroy in 1900.

Architect Weeks relaxes in his Watsonville home (1905).

> Plans must serve very plain and practical ends and in all cases design must be well within the scope of local craftsmanship. Above all the cost must not exceed the appropriation. An architect who has the experience to command confidence can, if he chooses, practically dictate the design. And hence it is that with his enormous experience Mr. Weeks has been able to overcome the questionable standards of much small-town work and achieve the surprising successes here shown...*Architect & Engineer, May 1915*

The article goes on to say that no architect in California had planned nearly as many buildings in the state as Weeks — more than 1,000 by 1915 — with the "excrescences, the cupolas, the vagaries and fantasies of design that are the salient characteristics of bucolic architecture". His output was truly remarkable and his designs ran from the Queen Anne through the Spanish Revival to the California Cottage.

When he was chosen as the architect for Watsonville's new High School in 1916, other schools he designed were under construction or just finished, such as Monterey High School, Eureka High School, Glenn County High School, Santa Cruz High School and Grammar School, Auburn Grammar School, Winters High School, Woodland Grammar and Primary School, Roseville High School, Red Bluff High School and the Paso Robles Grammar School. An innovation in the Watsonville High School was an inside ramp instead of a staircase — the first of its kind in California.

And what of William H. Weeks the man? This tall, slender, blue-eyed architect emerges from historical research as a man of fairness and ability with a keen sense of humor. Though on the road much of the time, he remained a devoted family man and also was active in the Christian Church and community. Maggie and Will Weeks had nine children, five living to maturity: three sons — Arthur, Foster and Harold — and two daughters, Margaret and Alice. Harold joined his father's firm in 1924 and the name was changed to Weeks & Weeks. Both sons are dead, but Weeks' two daughters still live in the Bay Area.

When William Henry Weeks died on April 29, 1936, California lost a very talented architect with a penchant for detail and a flair for knowing what the ordinary citizen wanted. His life is best summed up by the following paragraph from the *Encyclopedia of American Biography, 1937:*

> Through his distinguished professional attainments, reflected in the many hundreds of buildings which he designed on the Pacific Coast, William Henry Weeks rose to a position of recognized leadership among California architects. Best known by his work in creating many of the modern school structures of the State, he was equally versatile in other forms, and these tangible expressions of his fine talent remain behind him as an enduring monument.

Author Betty Lewis is the only researcher to date to be honored with four grants from the Sourisseau Academy at San Jose State University. In addition to researching Architect Weeks for the past five years, she has written *Watsonville — Memories that Linger, Monterey Bay Yesterday*, and *Victorian Homes of Watsonville.*

REFERENCE: California Historical Courier, July 1978

Japanese were the laws and public attitudes which made it difficult for them to own land or become citizens. Land was acquired by some Japanese who purchased it in their children's names. World War II saw the internment of Japanese families and their land leased to other people. For some Japanese, many years passed before they returned to Yolo County; others never returned.

Filipinos also provided farm labor and later the Bracero Program brought many Mexican Nationals into the area to work on the farms. Today, the Hispanic population has grown to approximately 20% of the City's residents.

As the City of Woodland grew, the need for city planning became evident. In the Spring of 1937, a City Planning Commission was created. A Zoning Ordinance was developed and adopted on July 18, 1938. In 1968, a new concern for aesthetics resulted in an ordinance requiring the undergrounding of utilities in new subdivisions. Since then, nine underground conversion projects have been completed. A General Plan was first adopted by the City in 1958 and underwent major review in 1962, 1967 and 1970. A new General Plan was adopted in 1979 following a five-year study and review process. It was updated in 1988.

2.B CITY LAND-USE HISTORY

A history of events leading to the present urban development that is Woodland is important for it lays the foundation for the existing land uses. Events such as the adoption of a Zoning Ordinance, the adoption of the General Plan, annexations and expansion of utility services along with the general needs and demands of a changing society have affected the community and determined the land use patterns. To better understand the existing land use characteristics, a review of the development of Woodland is appropriate.

Woodland was settled as an agricultural community around 1853. It became the County Seat of Yolo County in 1862 and has grown in its role as the major business and commercial center of the outlying rural communities in Yolo County.

The City of Woodland was first incorporated on February 22, 1871 and encompassed an area of 1.145 square miles. Its boundaries were defined by Beamer Street, East Street, a point south of Pendegast Street and West Street with a population of 1,600. This area included Main Street, the original center of the Communtiy. To the north and south of Main Street, residences were constructed. The early residential areas have been defined in the Historic Preservation Element as areas of historic interest due to the number of old homes.

With limits to the north and south, the commercial area expanded to the east and west and the residential areas followed along with further expansion to the north and south. The pattern of a strip of commercial uses along the main thoroughfare was established early in Woodland's development and has continued with only minor expansion into the residential areas.

The present Highways 16 and 113 provided overland routes to surrounding farming communities, larger towns and to market.

The railroads played an important role in the development of the community for they brought improved means for transporting agricultural crops to market and for obtaining goods needed by local residents. The first railroad connecting Davisville (City of Davis) and Woodland was constructed in 1869. Gradually, the railroad expanded and was acquired by the Southern Pacific Railroad. The mainline track was relocated from College Street to the then eastern edge of the City.

Warehousing and industries requiring rail service located adjacent to the railroad and created an industrial area which still remains in the area between East and Fifth Streets. In 1913, a residential area for railroad employees was developed in the area referred to as the Armfield Subdivision, northeast of the intersection of East Street and East Main Street.

The first major step toward the provision of urban services occurred in 1891, with the passage of the first bond issue for the construction of a City Hall and the purchase of the water works and construction of a sewer system. The following year the first Building and Fire Zone Ordinances were adopted setting standards for public health and safety.

The first annexation occurred in 1912 with the addition of 159 acres south of Bartlett Avenue between East and West Streets. The area was developed in residential uses.

By 1930, the City had increased in area and population to 1.63 square miles and 5,542 persons. The decade presented new attitudes toward land use and development. In 1931, the first Uniform Building Code was adopted; in 1937, the first Planning Commission was appointed; and in 1938, the first Zoning Ordinance was adopted. This Zoning Ordinance identified four zones and their uses; one and two Family Residential Zone, Multiple Family Zone, Commercial Zone and Industrial Zone.

The 1940's saw the continued growth of Woodland but activities were somewhat slowed during the war years. At the close of this decade the City had reached a population of 9,386 and had expanded in area to encompass 1.89 square miles or approximately 1,209 acres.

A new Zoning Ordinance was adopted in 1949 which added a second Multiple Family Zone and included provisions for parking, civic improvement districts, building setbacks and administrative procedures.

The City of Woodland, as did the rest of the State, experienced extensive growth in the 1950's. The population increased during this decade by 4,000 persons to a population of 13,524 in 1960.

With the promise of new and increasing growth the Yolo County Planning Board was formed in 1955 to oversee the preparation of a Master Plan. During the preparation of this plan, in 1957 and 1958, a moratorium was declared on annexations and subdivisions by the City Council.

The Master Plan was prepared for the County as a whole with separate sections for each of the incorporated cities and their surrounding areas. The objectives of the Woodland Plan were stated as follows:

1. To preserve the high residential character and attractive qualities of family living;

2. To continue to provide urban services and expand trading and distribution facilities for the farm and ranch areas of the County;

3. To continue to provide a high type and quality of public services and facilities including schools, parks and public buildings;

4. To develop a more complete central business district and system of small neighborhood shopping centers to serve more completely the local and area shopping requirements with a high degree of convenience and service;

5. To provide for a greater measure of local employment and a varied and strengthened tax base through the encouragement of attractive and acceptable industrial distribution, research, administrative and professional activities and developments;

6. To encourage the highest use of good agricultural soils and the development of acceptable agricultural industry;

7. To realistically relate plans for the future to soils, water, drainage, topography, sewerage and transportation advantages and limitations and to human resources and the wishes of the people in order that a sound and orderly development built on a sound economic base may be accomplished guided by a plan.

The Land Use Element of the Plan addressed itself to seven basic uses of land; residential neighborhoods, commercial, industrial, agricultural, administrative and professional, government centers and public-special land uses. The Plan was not developed to a specific date but rather to the ultimate development of the area it included. It was based on the conclusion that the area could and would grow and develop as planned because the natural and physical features existed or were available. The Plan provided for a potential population of 56,350 on 2385 acres with provisions for second stage development areas located south and west of County Roads 25 and 98, the Monument Hills Area and north of Kentucky Avenue. These second stage areas were envisioned to allow for an additional population of 80,500 (49,000, 17,500 and 14,000 respectively).

The Master or General Plan was adopted by the Woodland City Council on August 4, 1958. The Plan envisioned rapid growth for the City. Growth has occurred but not as rapidly as was anticipated.

During the preparation of the Master Plan, a redevelopment agency was formed by the City Council for the purpose of developing a plan for the redevelopment of the downtown area but was later disbanded in 1961 due to local opposition.

Following the adoption of the Master Plan, the City began to implement a public facilities plan to provide for future development. A bond issue passed in 1959 provided for a southside sanitary and storm sewer trunk line system in Gibson Road. In 1963, a similar bond was passed for the northside providing a Kentucky Avenue trunk line system.

The southside trunk line system opened the south area for development with full urban utility services west of Cottonwood Street and south of Gibson Raod. These areas are now completely developed with medium density development along Cottonwood Street and the remainder in single family residential uses.

The northside trunk line has provided increased potential for development in this area. New development has occurred west of West Street and north to Kentucky Avenue but only about 50% of the capacity has been utilized.

In August 1959, the plan lines for the Interstate 5 and Highway 113 freeways were adopted and acquisition of the rights-of-way on the east side of the City was begun. Interstate 5 Freeway was opened in 1973. Construction of State Route 113 Freeway is scheduled to be completed in 1990.

The City's Park Fund Fee Ordinance was adopted in 1960. This Ordinance was of particular significance because it provided funds for acquisition and development of a system of neighborhood parks in residential areas and community wide recreation facilities including ballparks and swimming pools to serve the community as further described in the Parks and Recreation Element.

In 1974, the City Council appointed a 38-person citizen's committee called the Woodland Area General Plan Citizen's Advisory Committee (WAGPCAC) to assist the Staff in the preparation of a new General Plan. The plan consisting of 11 elements took four years to complete. One year of study meetings and public hearings followed before adoption on August 7, 1979. A total of 170 meetings over a five-year period were held.

A new Subdivision Ordinance was adopted in 1981 replacing the ordinance adopted in 1954. This Ordinance is periodically amended to reflect changes in the State Subdivision Map Act.

A new Zoning Ordinance was adopted in 1983 to implement the 1979 General Plan. Density and development standards were modified and several new zoning categories were created and others were eliminated.

The Redevelopment Agency was reactivated in 1985. The Redevelopment Plan has been adopted by the City Council and the Agency.

During the past 25 years, the City has seen extensive residential growth to the south and west and more recently east of East Street. Commercial development has extended westerly along West Court and West Main Streets and along East Main Street. County Fair Mall, the new regional shopping center at East Street and Gibson Road opened in 1986. Industrial development has shifted from along West Kentucky and along East Street to the northeast area.

According to the 1980 Census, 67 percent of Woodland's labor force worked in Woodland and an additional 20 percent worked elsewhere in Yolo County, indicating that Woodland is an employment center and not a bedroom community.

The City has maintained its administrative offices in the downtown area on the site of the original City Hall at First and Court Streets. The Woodland Public Library was recently renovated and expanded. The County Courthouse and

new Administrative Center on Court Street remain the focal point of County government but a number of the offices, departments and services have been located in the area of West Beamer and Cottonwood Streets.

Other activities of particular significance have been the completion of the Historical Resource Inventory; Noise Attenuation Study for Residential Areas; Storm Drainage, Water and Wastewater Facilities Master Plans; and the Downtown Revitalization Plan.

Other areas within the General Plan Area but outside the City limits that have developed are the Willow Oak and the Hillcrest/Monument Hills Areas. Both these areas have experienced growth although the latter has grown more rapidly due to its location on non-prime agricultural soils. During the past 25 years, due in part to the County's hesitance to divide valuable prime agricultural land into five acre or smaller parcels for rural residences, there has been a demand to divide this marginal agricultural land into one to five acre parcels. The County of Yolo has actively participated in the general provisions of the Williamson Act and has been utilizing an Agricultural Preserve Zone (AP) throughout the County to protect the agricultural resources of the area.

The 1980 U.S. Census set the City of Woodland population at 30,235 persons. The total population of the defined General Plan Area was approximately 32,100. The following table shows the growth pattern of the City during its history:

TABLE 2-1

CITY OF WOODLAND POPULATION AND LAND AREA SUMMARY

Year	Population	Area (in acres)
1871	1,600	736
1890	3,069	736
1900	2,886	736
1910	3,189	736
1920	4,147	895
1930	5,542	1,043
1940	6,637	1,058
1950	9,386	1,209
1960	13,524	1,527
1970	20,677	3,148
1975	25,445	4,061
1980	30,235	4,285
1987	34,862	5,900
1988	36,941	5,900

Topography

3. TOPOGRAPHY

SETTING

Woodland is located in the Sacramento River Valley at an elevation of approximately 50 feet. The Sacramento River is approximately eight miles east of the city and the foothills of the Coast Range are about 15 miles west. Cache Creek, a tributary to the Sacramento River, runs from west to east approximately 1 1/2 miles to the north of the City. Woodland is located on the broad alluvial deposits of the Sacramento River, and general land slopes are low (less than one percent). The area slopes from west to east.

Geology/Seismicity

4. GEOLOGY/SEISMICITY

SETTING

The Woodland area is underlain by a very thick sequence of sedimentary deposits. The youngest of these is a Holocene alluvial unit that is in excess of 300 feet thick and consists of various mixtures of silts, clays and gravels. Beneath these recent sediments are other alluvial deposits, which have been identified as the Tehama Formation of Plio-Pleistocene age (1 to 3 million years old). The Tehama is approximately 2,000 feet thick in this vicinity. The total thickness of the sedimentary rock sequence, based on the cross-sections prepared by the California Division of Mines and Geology (1962), is approximately 15,000 feet.

4.A SEISMIC SHAKING

The serious concern for earthshaking is reflected in California by a broad range of laws and codes that have been adopted at State and local levels. The Uniform Building Code, the 1985 edition, contains a seismic map for the United States which categorizes the country into four zones:

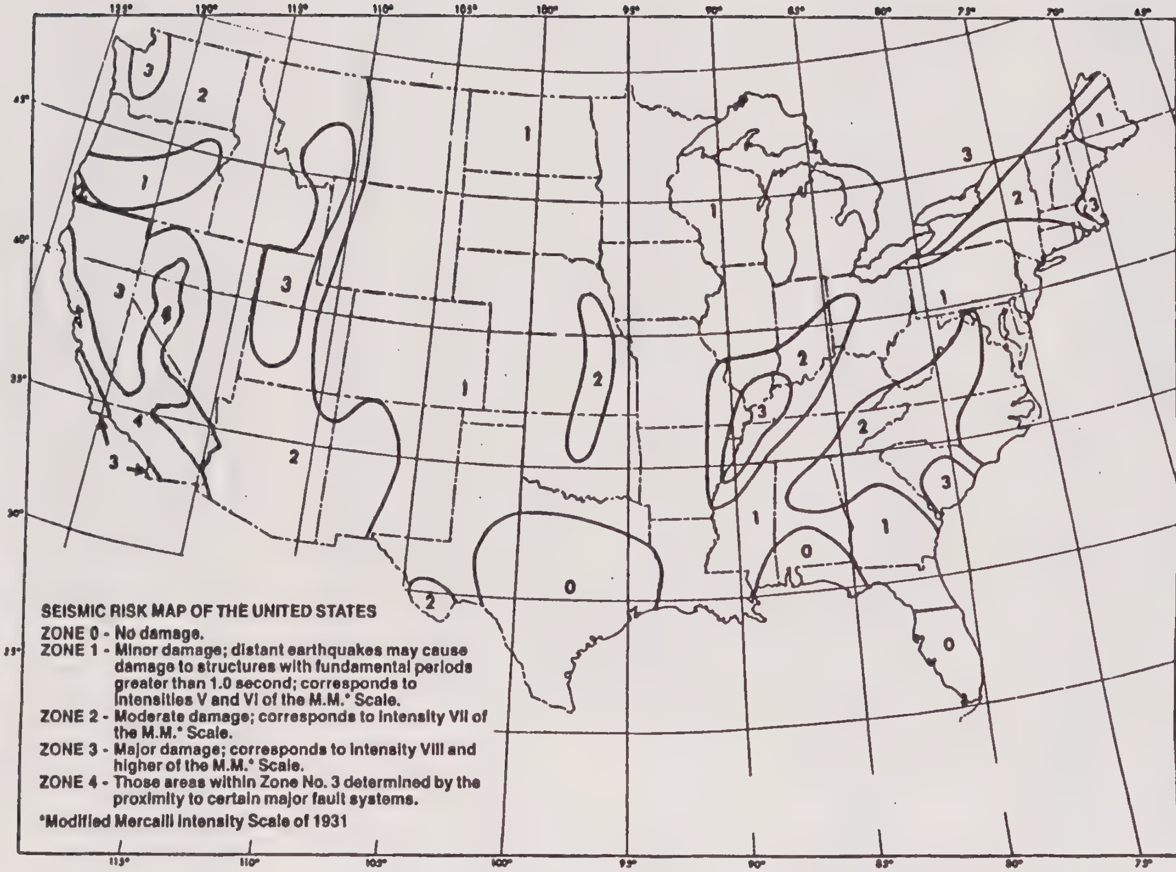
- Zone 0 - No damage.
- Zone 1 - Minor damage. Corresponds to Intensities V and VI on the Modified Mercalli Scale (refer to Figure 4-3).
- Zone 2 - Moderate damage. Corresponds to VII on the Modified Mercalli Scale.
- Zone 3 - Major damage. Corresonds to VIII or higher on the Modified Mercalli Scale.
- Zone 4 - Those areas within Zone No. 3 determined by the proximity to certain major fault systems.

As indicated in Figure 4-1, Seismic Risk Map of the United States, Uniform Building Code, 1985 Edition, the Woodland area lies within Zone 3. Although it is called a seismic risk map, what the UBC map actually shows is the probable seismic hazard in different parts of the country. The map does not take into account the frequency of earthquakes, nor the consequences of a future seismic event. Some general extent of earthquake hazard can be visualized although the map does not lend itself to the evaluation of risk.

In the event of an earthquake, seismic risk to a structure will depend on the distance of the structure from the epicenter and source fault, the character and magnitude of the earthquake, the geologic, groundwater and soil conditions underlying the structure and its immediate vicinity, and the nature of the construction.

FIGURE 4-1

1985 EDITION



SEISMIC ZONE MAP OF THE UNITED STATES

Structural damage due to ground shaking is caused by the transmission of earthquake vibrations from the ground into the structure. The variables which determine the extent of damage are: The characteristics of the underlying earth materials, the design of the structure, the quality of materials and workmanship used in construction, the location and magnitude of the earthquake, and the duration and intensity of shaking. The most destructive effects of an earthquake usually occur in areas where the ground is unstable and structures are poorly designed and constructed.

Given that reasonable care is taken in design of non-critical structures there should be no significant adverse impact involving such structures. To avoid significant adverse impacts involving critical structures such as towers, silos containing hazardous materials, or multi-story buildings, special design and construction practice is mandatory. Careful attention must be given to utility lines since the potential for earth shaking is high, even when the epicenter is physically distant from the City. (Careless or shoddy design and construction practices could lead to a high potential risk to occupants and property.)

As long as the water table remains at depths of 40 or more feet below the surface and building excavations are relatively shallow, there should be no problems with liquefaction. If the water table rises above 40 feet below the surface, the risk of liquefaction during a seismic event would increase drastically. At a minimum, new structures should be designed as if the water table levels were of the order of 20 feet. No significant adverse geologic impact or risk is forecast if the factors noted above are respected in the design, siting and construction of new facilities.

The City has adopted the 1985 UBC. Development in areas of expansive soils (moderate to high shrink/swell characteristics) should be carefully designed to minimize potential problems. The City should continue to monitor ground water levels <u>to avoid levels of 40 feet or less.</u> Special structural precautions will be necessary in the areas east of County Road 101 where the expansive soils are prevalent.

FAULTS

There are no known faults within the radius of five miles of downtown Woodland. Helley and Herd (1977), however, state that "Geomorphic evidence for young faulting was found just southwest of the City of Woodland. A northwest-trending trench and linear valley within the Pliocene Tehama Formation extend southeast from Weggers (Watts Woodland (sic) airport) just south of Cache Creek. These fault features trend into Quaternary alluvium exhibiting strong soil moisture contrasts probably owing to the existence of a ground-water barrier. Juxtraposition of Holocene deposits along a linear contact in this area suggests young faulting." In a personal communication in 1978, Mr. Helley indicated that there is the possibility of a fault in the vicinity of Brown's Corner that is oriented in a northwest/southeast direction. His evidence is based on a study of false color infrared photography and some field mapping. Using the false color aerial photography, he has identified a strong photo lineation that appears to affect the

boundaries between the various soil types disrupt drainage and may be a water barrier. The cause of this lineation has not been determined. This and other lineations were seen by this principal investigator in an over-flight of the area on July 18, 1978. These lineations could be followed from the Dunnigan Hills southward to Cache Creek. South of Cache Creek, the principal lineation was ill-defined.

Another fault which has been idenfified by the California Division of Mines and Geology is the Dunnigan Hills Fault which is located approximately five miles northwest of Woodland. This fault has not yet been verified by field investigation but a projection of the trend of the fault will pass through Woodland. A credible earthquake of M=6.75 is possible on the Dunnigan Hills fault according to R. Greensfeld (1974) in his report on "Maximum Credible Rock Acceleration from Earthquakes in California." Further, there are two major areas of faults within Yolo County: the Midland Fault Zone and the area surrounding Capay Valley. The Midland Fault Zone is located approximately 20 miles southwest of Woodland between the town of Winters and the Coast Range in the southwestern portion of the County. Two concealed faults are located within the zone.

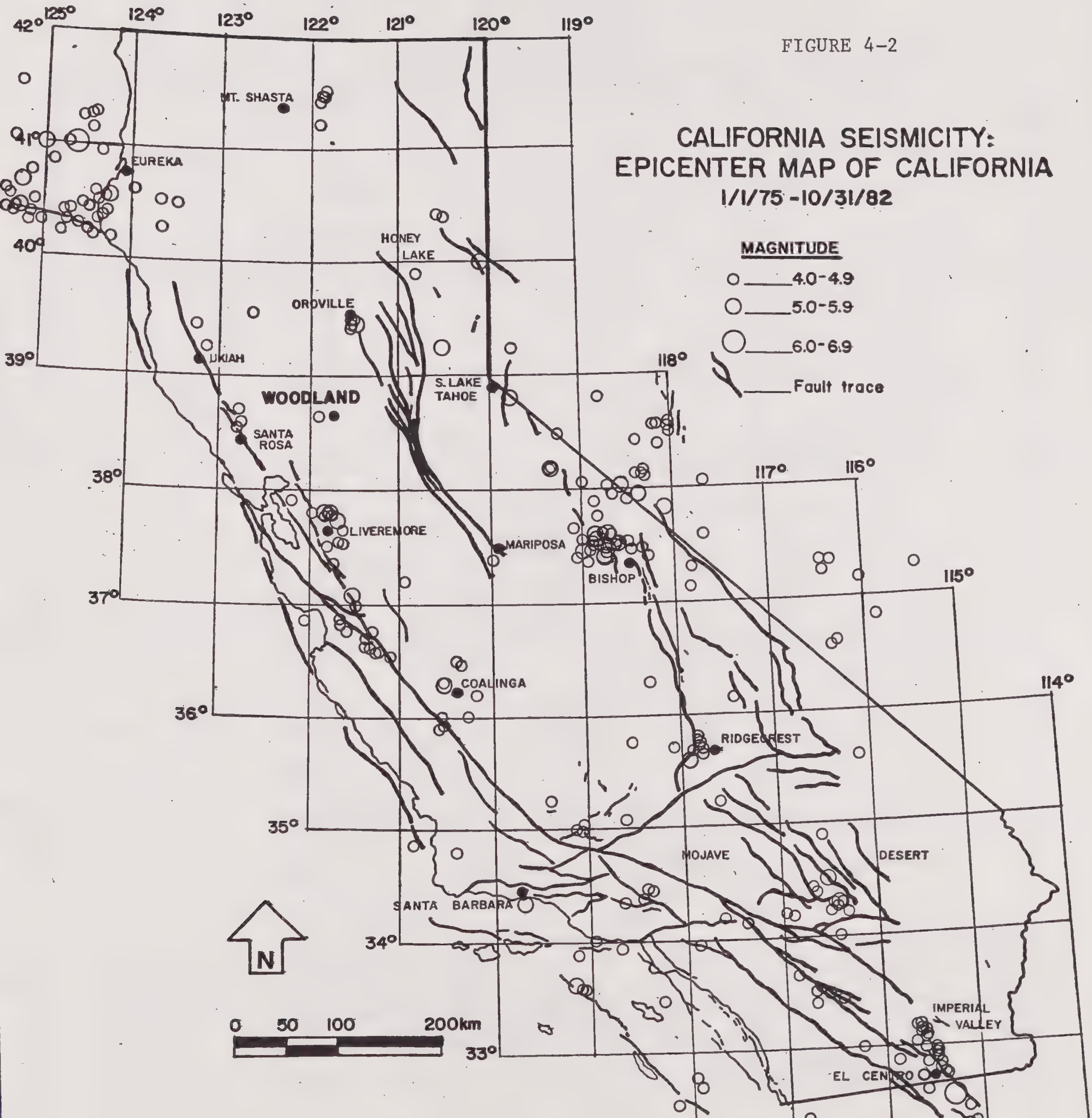
Included within the Capay Valley area, 25 miles west of Woodland, are two major faults that border the valley in the Capay Hills. The Sweitzer Fault is located just below the ridge line of the Capay Hills parallelling the valley. The Eisner Fault is located at the upper end of Capay Valley just below the Sweitzer Fault. Sweitzer is a thrust fault in nature. The remainder of the known faults are located on the western and northwestern border of Yolo County in the Blue Ridge and Rocky Ridge Hills. It is difficult, and perhaps impossible, to determine the actual effects these and active faults at greater distances might have on Woodland when an earthquake occurs. As indicated earlier and shown in Figure 4-1, the Woodland area has been placed in Zone 3 of the Seismic Risk Map of the United States for puposes of structure safety.

EARTHQUAKE HISTORY

Woodland had experienced moderate building damage due to eathquakes during the 1890's. The causative fault and the precise location for these events are still uncertain. Woodland has experienced ground shaking due to a number of earthquakes located on various Northern California faults since 1892. Figure 4-2 shows the history of seismic history in California from 1975 through 1982. The damage due to these earthquakes was minor, with no structural building damage reported. The Oroville earthquake of 1975 was one of these minor occurances. The various intensities for this quake in vicinities surrounding Oroville are shown in Fig 4-3.

The following table 4-1 lists a number of northern California faults. If any one of these faults were the epicenter of a moderate to major earthquake, Woodland could be affected.

FIGURE 4-2



Source: CALIFORNIA GEOLOGY July 1979, April 1985
CDMG

FIGURE 4-3

Source: CALIFORNIA DIVISION OF MINES AND GEOLOGY

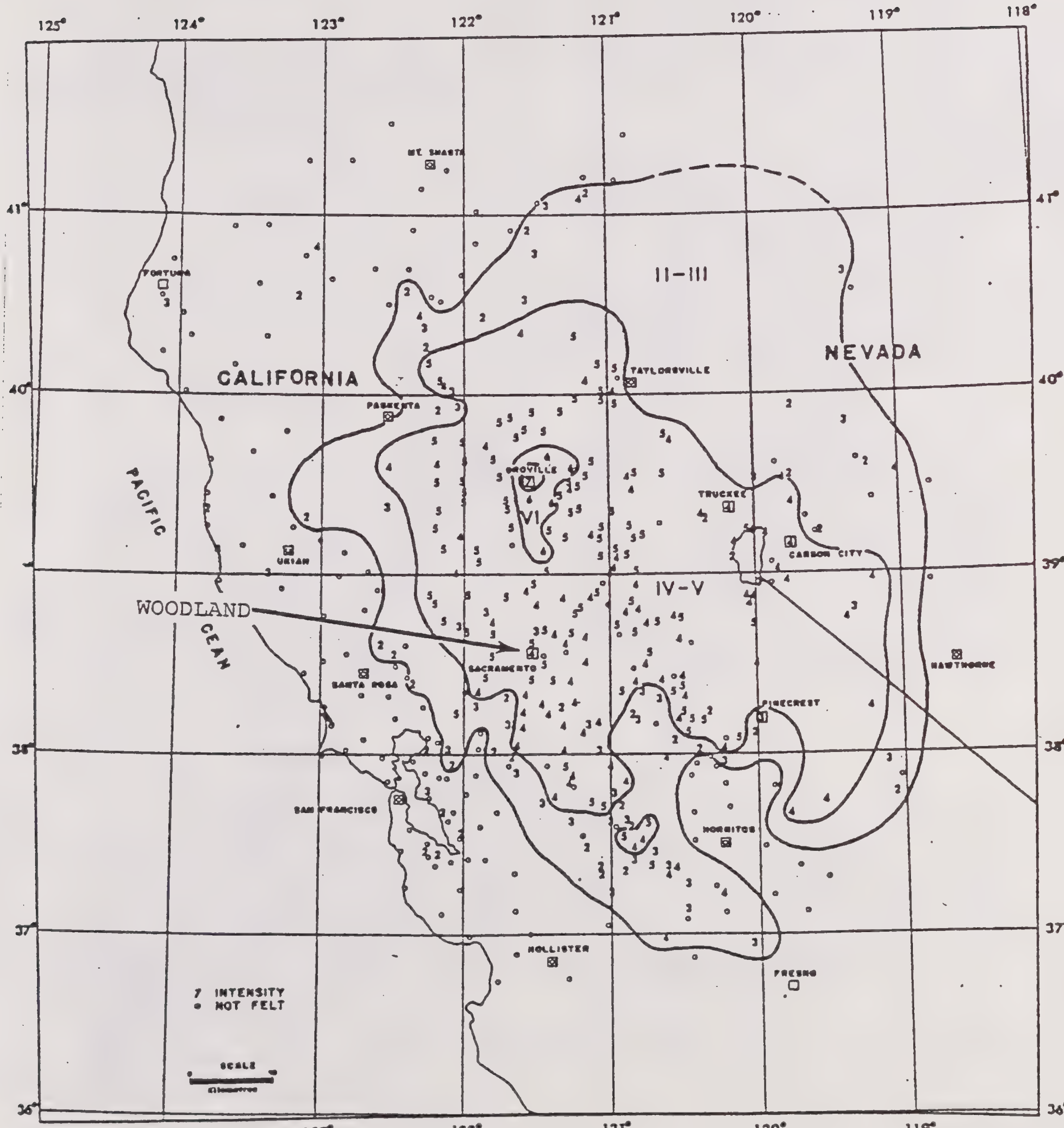


TABLE 4-1
NORTHERN CALIFORNIA FAULTS

Fault	Approximate Distance From Woodland (miles)
Antioch	48 south
Bear Mountain	38 east
Calaveras	55 south
Concord	47 southwest
Dunnigan Hills	7 northwest
Green Valley	38 southwest
Hayward	58 southwest
Healdsberg-Rodgers Creek	50 southwest
Maacama	51 west
Melones	48 east
Midland	11 southwest
San Andreas	70 southwest
Sweitzer	19 northwest
West Napa	38 southwest

The Antioch, Calaveras, Concord, Green Valley, Hayward, Healdsberg-Rodgers Creek fault systems are known to be active and it is estimated that maximum earthquakes on those faults could range from 6 to 7 Richter magnitude. The active San Andreas Fault, which could generate an earthquake of Richter magnitude 8.3, is located approximately 70 miles west of the site. The existence, location, and nature or activity of other faults in the site vicinity have not been proven. Faults that have been mapped near Woodland are shown on Figure 4-4.

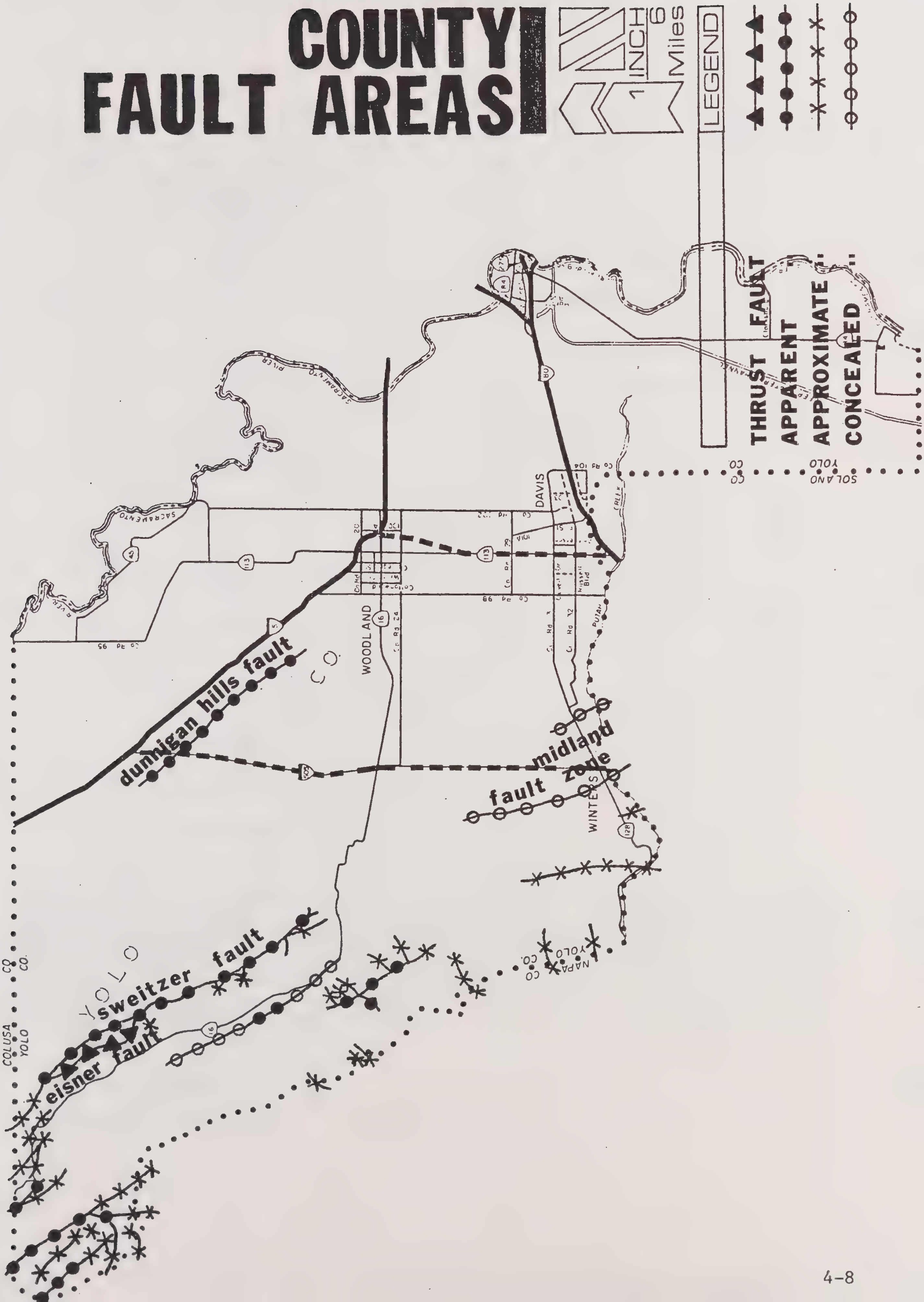

COUNTY
FAULT AREAS
1 INCH
6 Miles
LEGEND
THRUST FAULT
APPARENT
APPROXIMATE
CONCEALED
DAVIS
WOODLAND
WINTERS
YOLO CO.
dunnigan hills fault
midland fault zone
sweitzer fault
eisner fault
COLUSA
YOLO
CO.
CO.
YOLO
SOLANO
CO.
YOLO
NAPA
CO.
SACRAMENTO RIVER

FIGURE 4-4

Soils

5. SOILS

5.A CLASSIFICATION

Soil formation depends upon the parent material, relief, climate, plants and animals, and time. Warm temperatures provide for rapid decomposition of organic matter and soil minerals. The soil of the Woodland Area is mostly Class I and Class II and such is termed prime agricultural soil. (Fig. 5-1) Relatively small areas of Class III and IV soils exist along the western edge of the General Plan Area. A finger of Class VIII soils exist along the western edge of the General Plan Area. Class IV soils are also found to the east along the Yolo By-pass. The following definitions for soils capability Classes I-IV and VIII are cited from soil survey of Yolo County, California published by the United States Soil Conservation Service:

> Class I soils have few limitations that restrict their use.
>
> Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.
>
> Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.
>
> Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both.
>
> Class VIII soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife, or water supply, or to esthetic purposes.

See Figure 5-1 for the different agricultural soil classifications in close proximity to the urban limit line of the City of Woodland.

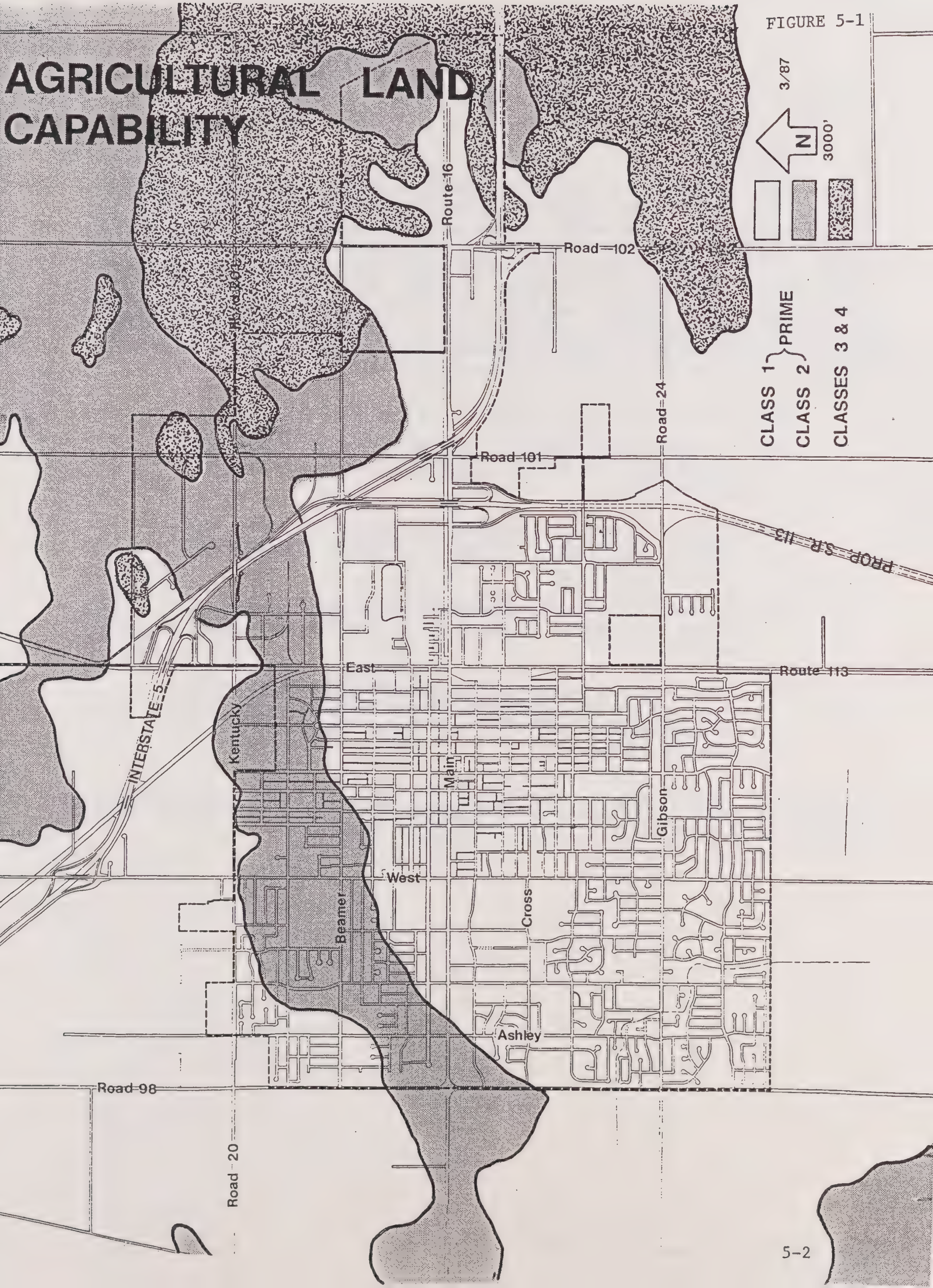

AGRICULTURAL LAND CAPABILITY
3/87
N
3000'
CLASS 1
CLASS 2
PRIME
CLASSES 3 & 4
Route 16
Road 102
Road 101
Road 24
PROP. S.R. 113
Route 113
East
Kentucky
INTERSTATE 5
Main
Gibson
West
Cross
Beamer
Ashley
Road 98
Road 20

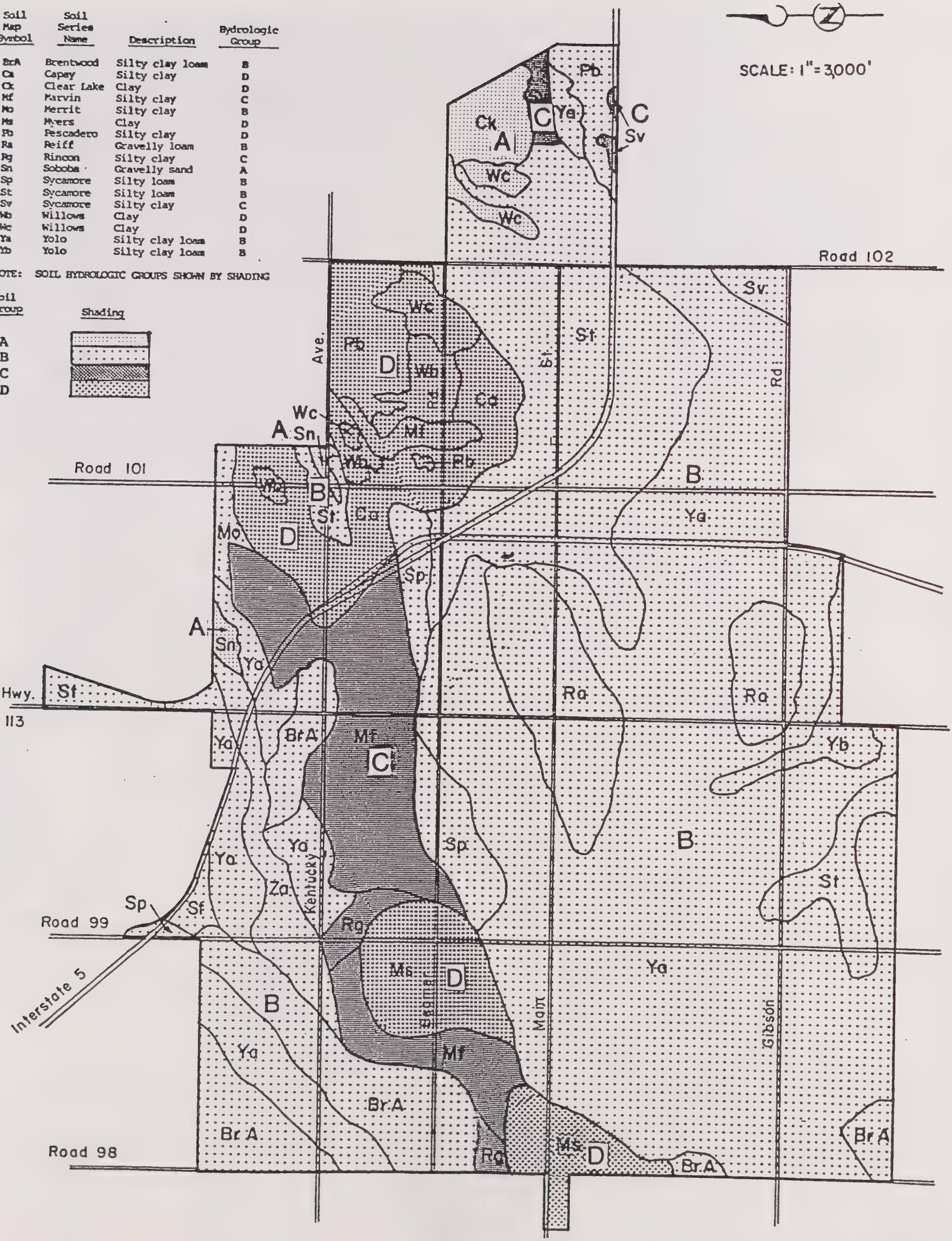
FIGURE 5-1

5.B SOIL STRUCTURE & TYPES

The Woodland area has three main types of soil: Yolo Silt Loam, Yolo Silty Clay Loam, and Marvin Silty Clay Loam. The soil characteristics of the Yolo series are moderately permeable, very slow surface runoff, none to slight erosion hazard, high natural fertility, 9 to 12 inches of available water holding capacity, less than one percent slope, welldrained, and on alluvial fans. These fertile soils are used manly for producing almonds, walnuts, corn, sugar beets, tomatoes, alfalfa, and melons. Other uses include dry farmed barley, wildlife habitat, and recreation. The soil characteristics of the Marvin series are slow permeability, very slow surface runoff, none to slight erosion hazard, high natural fertility, less than one percent slope, somewhat poorly drained, and on basin rims. Alfalfa, sugar beets, tomatoes, and rice are produced on soil of the Marvin series. Other uses include irrigated pasture, dry farmed barley, safflower, wildlife habitat and recreation.

Other prominent soil types found in the area include but are not limited to: 1.) Brentwood Silty Clay Loam -a moderately permeable soil with very slow runoff, none to slight erosion hazard, high natural fertility, 0 to 2 percent slopes, available water holding capacity of 11 to 13 inches, found on alluvial fans and being will-drained; 2.) Reiff Very Fine Sandy Loam -well drained, found on alluvial fans with moderately rapid permeability, slopes less than one percent, very slow surface runoff, erosion hazard none to slight, available water holding capacity of 8.5 to 10.0 inches, and high fertility; and, 3.) Sycamore Silty Clay Loam -well drained, found on alluvial fans with slopes of less than one percent, moderately slow permeability, very slow surface runoff, erosion hazard none to slight, and water hold capacity of 10.0 inches to 12.0 inches.

Please see Figure 5-2 for mapped soil types in the Woodland vicinity.



Soil Map Symbol	Soil Series Name	Description	Hydrologic Group
BrA	Brentwood	Silty clay loam	B
Ca	Capay	Silty clay	D
Ck	Clear Lake	Clay	D
Mf	Marvin	Silty clay	C
Mo	Merrit	Silty clay	B
Ms	Myers	Clay	D
Pb	Pescadero	Silty clay	D
Ra	Reiff	Gravelly loam	B
Rg	Rincon	Silty clay	C
Sn	Soboba	Gravelly sand	A
Sp	Sycamore	Silty loam	B
St	Sycamore	Silty loam	B
Sv	Sycamore	Silty clay	C
Wb	Willows	Clay	D
Wc	Willows	Clay	D
Ya	Yolo	Silty clay loam	B
Yb	Yolo	Silty clay loam	B

NOTE: SOIL HYDROLOGIC GROUPS SHOWN BY SHADING

Soil Group	Shading
A	
B	
C	
D	

Figure 5-2 Soils Map

5.0 SOILS

SOURCES

1. Soil Survey of Yolo County, CA (1972)

2. Final EIR for the Woodland Area General Plan (1981)

3. Final EIR for Highway 113 Realignment. Clearinghouse #83091047 (1985)

Climate

6. CLIMATE

The Woodland area has hot, dry summers with a maximum recorded temperature of 114° and cool, rainy winters with a minimum recorded temperature of 15°. Summer daytime temperatures average 95° or higher and nighttime temperatures are in the 50's. The average winter temperatures range between 35° and 56°. There are dry north winds, which are especially strong two to four times a year, and light southerly winds. East and west winds are limited in the area. The hardest winds are from the north, prevailing winds are from the south. Sunshine is abundant in the summer and fall and less abundant in the winter. Approximately 95% of the summer days and 45% of the winter days are clear. Heavy fog persists for several days or weeks in the winter, but is not a frequent occurrence.

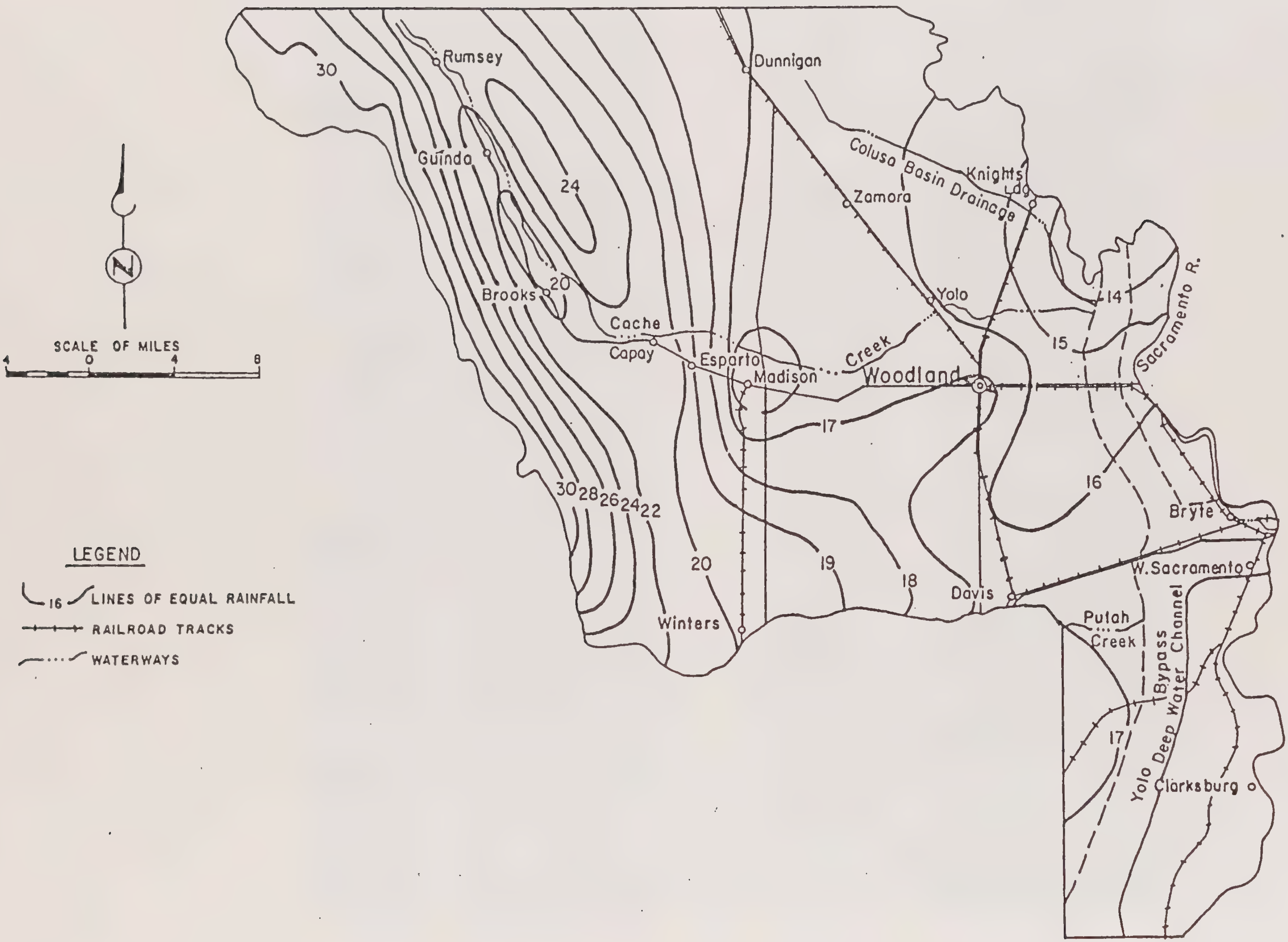
The Woodland area has an ideal temperature for agriculture and adequate rainfall for crop growth during seven months of the year. Irrigation is required for continued growth during the rest of the year. Two hundred seventy-five (275) days of the year are above 32° which constitutes the growing season for the area.

6.A RAINFALL

The mean annual precipitation for the City of Woodland is approximately 17 inches. Figure 6-1 shows the variation in mean annual precipitation over the Yolo County area. Generally, precipitation is highest in the foothill areas and decreases with proximity to the Sacramento River. The figure shows little variation in precipitation on an east-west line between Madison (approximately 11 miles west of Woodland) and the Sacramento River (approximately 8 miles east). Based on the uniformity of the mean annual precipitation and lack of distinct topographical features, little variation in shorter term rainfall intensity-duration-frequency relationships would be expected over the area.

Precipitation in Woodland generally occurs as rain and is normally associated with frontal movement. The rainy season receives approximately 94% of its annual rainfall during this period. The frontal storms cover a large area, and two or more may occur in rapid succession. This results in high runoff conditions in all of Yolo County.

MEAN ANNUAL PRECIPITATION IN YOLO COUNTY



Air Quality

7. AIR QUALITY

SETTING

Air quality in the Woodland area is typical of that in the lower Sacramento Valley, absent the higher pollution levels present in the highly urbanized Sacramento metropolitan area. Wind statistics at the ground surface are comparable to those measured at Sacramento. The prevailing wind direction is southerly, although northerly winds occur more frequently in the winter; surface inversions occur from 52% to 84% of the time in each of the four seasons, and elevated inversions from 16% to 48% of the time. The Yolo-Solano Air Pollution Control District maintains an air quality monitoring site within the City of Woodland, measuring oxidants, carbon monoxide and total suspended particulates. The most severe existing air quality problem is ozone.

7.A AIR QUALITY STANDARDS

The Federal Clean Air Act provides that national ambient air quality standards can be exceeded no more than once a year. Areas which exceed the standard two or more times per year can be considered "non-attainment areas" subject to more stringent planning and pollution control requirements. Once an area has been declared non-attainment for a particular pollutant, the area must show twelve consecutive calendar quarters without any violations in order to be redesignated as an "attainment" area. The Unites States Environmental Protection Agency (EPA) has put forth national ambient air quality standards for a variety of pollutants as required by the Clean Air Act Amendments of 1977. The Clean Air Act required that the standards be set at a level that protects public health and welfare, allowing for an adequate margin of safety. Although EPA has sole responsibility for setting the air quality standards, the adequacy of the scientific data on which the standards are based and the correctness of EPA's interpretations have been reviewed by the National Academy of Sciences and other organizations. In general, the standards have been set at concentrations that protect sensitive groups from significant health impairments. However, the standards do not assure that unusually sensitive persons will be protected against all adverse health effects.

California state ambient air quality standards are set by the State Air Resources Board. The state air quality standards are levels which are not meant to be equalled or exceeded; however, unlike federal law, there are no penalties or additional requirements which are imposed on areas which exceed these levels. (Table 7-1 shows state and federal ambient air quality standards.) A brief discussion of pollutants for which there are standards is found in the Appendix.

7.B AIR QUALITY CONDITIONS

The following report describes air quality conditions in the planning area which includes Yolo County and the City of Woodland. The full report, prepared by the Sacramento Area Council of Governments in 1982, places emphasis on hydrocarbon emissions and ozone levels. Excerpts from the report follow:

TABLE 7-1

AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[2,5]	Secondary[2,6]	Method[7]
Oxidant[10]	1 hour	0.10 ppm (200 ug/m³)	Ultraviolet Photometry	–	–	–
Ozone	1 hour	–	–	0.12 ppm (235 ug/m³)	Same as Primary Standard	Ethylene Chemiluminescence
Carbon Monoxide	8 hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Spectroscopy (NDIR)	9.0 ppm (10 mg/m³)	Same as Primary Standards	Non-Dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
Nitrogen Dioxide	Annual Average	–	Gas Phase Chemiluminescence	100 ug/m³ (0.05 ppm)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 hour	0.25 ppm (470 ug/m³)		–		
Sulfur Dioxide	Annual Average	–	Ultraviolet Fluorescence	80 ug/m³ (0.03 ppm)	–	Pararosaniline
	24 hour	0.05 ppm (131 ug/m³)[9]		365 ug/m³ (0.14 ppm)	–	
	3 hour	–		–	1300 ug/m³ (0.5 ppm)	
	1 hour	0.25 ppm (655 ug/m³)		–	–	
Suspended Particulate Matter (PM_{10})	Annual Geometric Mean	30 ug/m³	PM_{10}	–	–	–
	24 hour	50 ug/m³		–	–	
Suspended Particulate Matter	Annual Geometric Mean	–	–	75 ug/m³	60 ug/m³	High Volume Sampling
	24 hour	–		260 ug/m³	150 ug/m³	
Sulfates	24 hour	25 ug/m³	Turbidimetric Barium Sulfate	–	–	–
Lead	30 day Average	1.5 ug/m³	Atomic Absorption	–	–	–
	Calendar Quarter	–	–	1.5 ug/m³	Same as Primary Standard	Atomic Absorption
Hydrogen Sulfide	1 hour	0.03 ppm (42 ug/m³)	Cadmium Hydroxide STRactan	–	–	–
Vinyl Chloride (Chloroethene)	24 hour	0.010 ppm 26 ug/m³)	Tedlar Bag Collection, Gas Chromatography	–	–	–
Visibility Reducing Particles	1 observation	In sufficient amount to reduce the prevailing visibility[8] to less than 10 miles when the relative humidity is less than 70%		–	–	–

INTRODUCTION AND SUMMARY

In the Winter and Spring of 1982, the Cities and Counties of the Sacramento Area adopted individual programs to reduce air pollution. The individual programs together with this and other areawide documents constitute the Sacramento Air Quality Plan as required by the Federal Clean Air Act.

The Sacramento Area Council of Governments (SACOG) was the lead agency working with Cities, Counties, Air Pollution Control Districts, transit agencies, and citizens groups to assemble a plan to reduce the concentrations of ozone and carbon monoxide to acceptable levels.

The plan is for an area including Sacramento and Yolo Counties and portions of Placer and Solano Counties. This area is called the Sacramento Air Quality Maintenance Area (map on next page).

Congress required in the 1977 Clean Air Act Amendments that an Air Quality Plan be prepared by 1979. This plan was required to show the attainment of air quality standards by 1982, if the attainment was possible. If it was not possible to show attainment of the standards by 1982, the plan had to show attainment by 1987. If attainment by 1982 was not possible, the Clean Air Act also required that a plan be developed by 1982 that describes precisely what will be done to attain the standards by 1987. This report and the other documents described above constitute the plan required by 1982.

In the Sacramento area, there are violations of the air quality standards for three pollutants: ozone, carbon monoxide and total suspended particulates. SACOG is the lead planning agency for ozone and carbon monoxide. Therefore, this plan deals principally with these two pollutants. The California Air Resources Board is the lead planning agency for total suspended particulates and has the responsibility for preparing the plan for that pollutant.

THE IMPACT OF THE 1982 AIR QUALITY PLAN

This plan does not contain locally adopted or supported programs that are strong enough to reduce pollution levels to the federal standard for ozone by 1987. This plan does not, for that reason, meet the requirements of the Federal Clean Air Act.

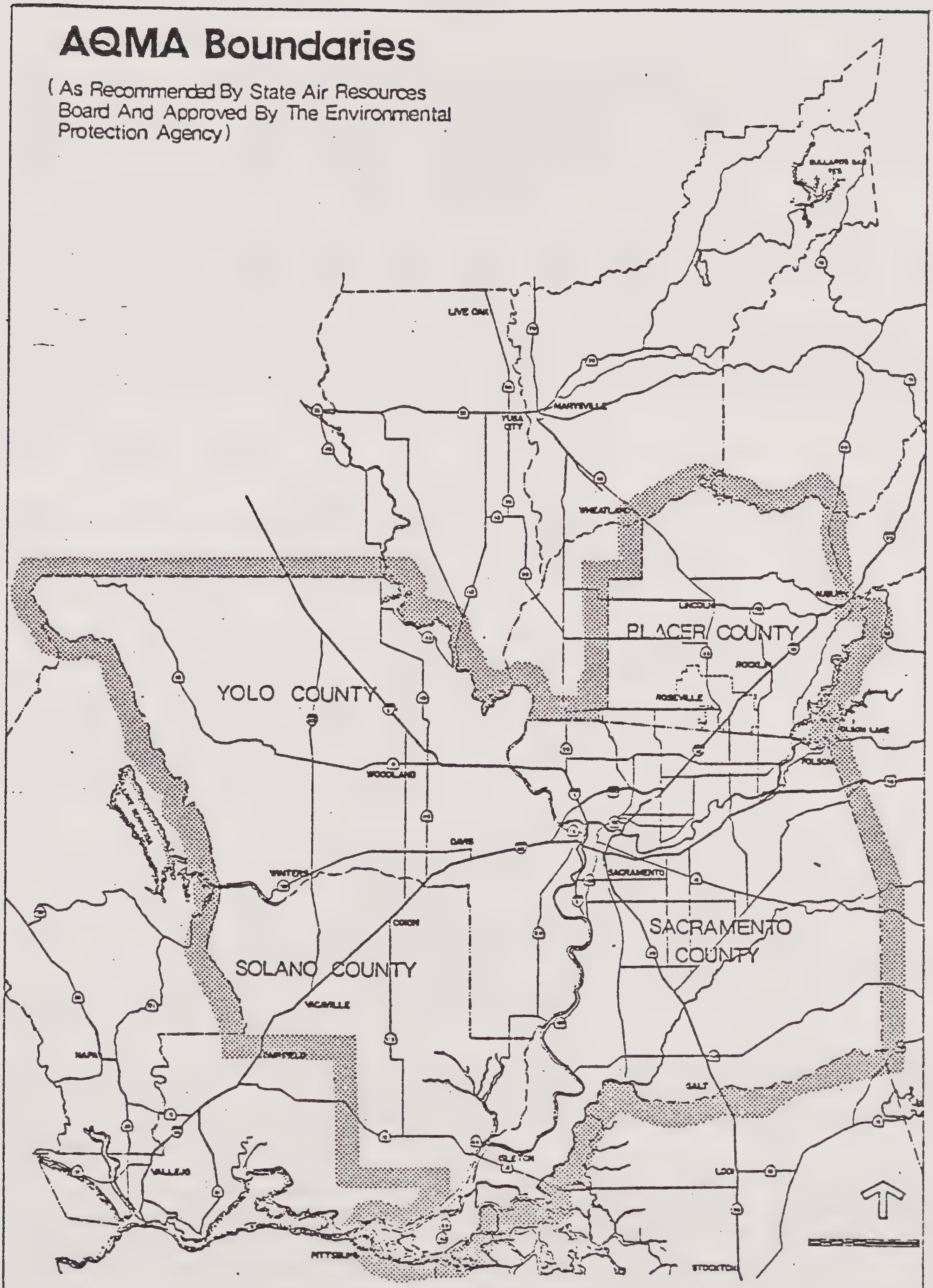
This plan does, however, meet the Federal Environmental Protection Agency's guidelines requiring that all reasonably available transportation measures be adopted and that the best available control technology be applied to stationary and area sources of pollution. This means that once the Legislature authorizes a motor vehicle inspection and maintenance program (a specific requirement of the Clean Air Act), the sanctions on the use of federal sewer and highway construction funds will be lifted.

The plan does project attainment of the carbon monoxide standard by 1987.

The continued violations of the ozone standard is a frustrating and perhaps insolvable problem. It may not be possible, with current technology, to have clean air and a million people in the Central Valley. At the core of this issue is the automobile and the manner in which people have used it

AQMA Boundaries

(As Recommended By State Air Resources Board And Approved By The Environmental Protection Agency)



Source: SRAPC March, 1977

historically. The Cities and Counties have committed to ambitious and aggressive programs to reduce the use of the car through such programs as parking management, ridesharing, transit, and bicycle systems. The City and County of Sacramento have set as a goal a 30% reduction in the use of cars by 1987. There is no evidence, however, to indicate that the programs that have been adopted will cause that kind of reduction.

Typically, a very aggressive auto use reduction program might cause as much as a 10% reduction. This 10% estimate has been used as the basis for the conclusion that the plan will not cause the ozone standard to be attained.

A complete technical analysis of the air pollution reductions associated with this plan is contained in the August 1982 SACOG report, Attainment of National Ambient Air Quality Standards in the Sacramento Area, and is summarized as follows:

THE AIR QUALITY PROGRAM

The first steps in developing a plan to achieve clean air are to identify the magnitude and the causes of the problem. SACOG worked with the Air Resources Board, CALTRANS, and the Air Pollution Control Districts to identify the actual 1979 conditions and the estimated 1987 conditions, assuming no new controls were used.

The following tables show the trends for ozone and carbon monoxide air quality standard violations at the main air quality monitoring stations in each of the three-Air Pollution Control Districts in the Sacramento Air Quality Maintenance Area. The concentrations and periods of time that represent the air quality standards which are violated in the Sacramento area are 0.12 parts per million ozone for a one-hour period, and 9.3 parts per million carbon monoxide for a eight-hour period.

Air quality monitoring data from the three APCDs show somewhat mixed results. Ozone concentrations in Sacramento County increased in years 1976-78 and decreased during 1979. During the period 1979-81, peak concentrations decreased, but the number and duration of exceedances of the Federal standard increased. For carbon monoxide, the general trend has been a decrease in the number and duration of violations since 1976, with a slight rise in hours over the standard during 1980 when compared to 1979 levels. The substantial decrease in the violations of the carbon monoxide standard in 1981 was due to unusually unstable weather.

For the Yolo-Solano APCD, ozone levels at the Woodland station have decreased in both number and duration from 1978 to 1980. The 1980 peak level rose slightly compared to the 1979 peak, and the number and duration of violations increased from 1980 to 1981.

The Placer County APCD has had a steady decrease both in ozone peak concentrations and in the number and duration of violations at the Sierra College station between 1978 and 1980. Between 1980 and 1981, the number and duration of the violations have increased.

OZONE MONITORING RECORD

JURISDICTION:	SACRAMENTO COUNTY			YOLO-SOLANO			PLACER COUNTY		
STATION:	Creekside			Woodland			Sierra College		
YEAR	Peak	Hours Over .12 PPM	Days with 1-hr. Periods Over .12 PPM	Peak	Hours Over .12 PPM	Days with 1-hr. Periods Over .12 PPM	Peak	Hours Over .12 PPM	Days with 1-hr. Periods Over .12 PPM
1976	.16	13	8	.11	-0-	-0-	--	--	--
1977	.19	21	8	.11	-0-	-0-	--	--	--
1978	.22	37	15	.15	9	5	.18	84	21
1979	.20	7	2	.13	2	1	.20	20	8
1980	.18	19	8	.14	2	1	.16	18	7
1981	.15*	22*	9*	.13	6	3	.14	19	9

CARBON MONOXIDE MONITORING RECORD
SACRAMENTO COUNTY
CREEKSIDE STATION

YEAR	PEAK 8-HR. AVERAGES	HOURS OVER 9.3 PPM 8-HR. STANDARD	DAYS WITH VIOLATION OF 9.3 PPM 8-HR. STANDARD
1976	19.6	289	22
1977	13.5	98	8
1978	11.9	54	5
1979	11.8	65	6
1980	11.8	69	6
1981	10.4	15	1

* 1981 Sacramento County ozone data is from the Del Paso Manor Station. Due to equipment failure, the 1981 Creekside ozone data is not usable.

1979 and 1987 EMISSIONS

The following table summarizes the emissions produced by various sources within the modeling area in 1979 and estimated for a 1987 "baseline" condition. The "baseline" projection represents planned growth* in the region and only those emission controls that have already been adopted as rules or ordinances. Emission reductions caused by additional controls established as a result of this plan can be subtracted from the baseline projection.

The baseline projections indicate that even without any further emission controls being adopted, a 28% reduction in reactive hydrocarbon emissions will result. A large part of this reactive hydrocarbon emission reduction is due to a substantial reduction in on-road motor vehicle emissions. This reduction is due to existing state and federal controls on motor vehicle emissions. Major reductions also occur in Petroleum Marketing, Storage and Distribution, and Other Organic Compounds and Evaporation. Many categories increase, some substantially.

Moderate reductions in the level of nitrogen oxides and carbon monoxide emissions are also projected under 1987 baseline conditions. The 14% reduction in nitrogen oxides and 12% reduction in carbon monoxide result primarily from reductions in on-road motor vehicle emissions. The level of nitrogen oxides and carbon monoxide increases in nearly every other emission source category.

The necessary 50% reduction in the 1979 hydrocarbon emissions (112.22 tons/day) equates to an allowable emission level for the modeling area of approximately 56.11 tons/day.

REACTIVE HYDROCARBONS (TONS/DAY)

	1979	1987 Baseline	1987 Baseline w/I&M
Mobile Source:	66.08	37.80	30.24
Total:	112.22	80.61	73.05
Allowable:	56.11	56.11	56.11
Defference:	56.11	24.50	16.94

It is clear that the standard cannot be achieved through transportation controls alone. A 65% reduction in projected 1987 auto use would be required.

It is also clear that as cars become cleaner due to exhaust emission standards and the Inspection and Maintenance program, any reduction in auto use contributes relatively less to the necessary emission reduction. For example, in 1979, a 10% decrease in auto use would cause approximately a 6.6 ton/day reduction in hydrocarbon emissions. That 10% auto reduction in 1987 will only reduce emissions by 3.02 tons/day.

AIR QUALITY PLAN MODELING AREA
COMPARISON OF EMISSIONS BY SOURCE
1979 VALIDATION VERSUS 1987 BASELINE

MAJOR SOURCE CATEGORY	REACTIVE HYDROCARBONS					CARBON MONOXIDE					NITROGEN OXIDES				
	1979 VALIDATION		1987 BASELINE		% Change from 1979-1987	1979 VALIDATION		1987 BASELINE		% Change from 1979-1987	1979 VALIDATION		1987 BASELINE		% Change from 1979-1987
	Tons/ Day	% of Total	Tons/ Day	% of Total		Tons/ Day	% of Total	Tons/ Day	% of Total		Tons/ Day	% of Total	Tons/ Day	% of Total	
PETROLEUM MARKETING, STORAGE & DISTRIBUTION	8.88	7.91	4.10	5.09	-54	-0-	-0-	-0-	-0-	N/A	-0-	-0-	-0-	-0-	N/A
OTHER ORGANIC COMPOUNDS & EVAPORATION	14.45	12.88	11.98	14.86	-17	-0-	-0-	-0-	-0-	N/A	-0-	-0-	-0-	-0-	N/A
COMBUSTION OF FUELS	0.08	0.07	0.25	0.31	+213	0.94	0.15	1.39	0.25	+48	4.95	4.39	6.36	6.62	+28
AGRICULTURAL BURNING	3.46	3.08	3.53	4.38	+ 2	23.30	3.67	24.66	4.44	+ 6	-0-	-0-	-0-	-0-	N/A
DOMESTIC UTILITY ENGINES	1.21	1.08	1.42	1.76	+17	11.18	1.76	13.11	2.36	+17	0.01	0.01	0.01	0.01	-0-
ON-ROAD VEHICLES	66.08	58.88	37.80	46.89	-43	534.02	84.12	438.58	78.95	-18	84.80	75.22	64.21	66.84	-24
OFF-ROAD VEHICLES	10.19	9.08	11.54	14.32	+13	47.66	7.51	53.85	9.69	+13	20.92	18.56	22.99	23.93	+10
AIRCRAFT	2.06	1.84	2.46	3.05	+19	16.06	2.53	20.65	3.72	+29	1.60	1.42	1.94	2.02	+21
CHEMICAL INDUSTRY	0.86	0.77	0.93	1.15	+ 8	0.18	0.03	0.22	0.04	+22	0.43	0.38	0.54	0.56	+26
OTHER	4.95	4.41	6.60	8.19	+33	1.47	0.23	3.05	0.55	+107	0.02	0.02	0.02	0.02	-0-
TOTAL	112.22	100.00	80.61	100.00	-28	634.81	100.00	555.51	100.00	-12	112.73	100.00	96.07	100.00	-15

AIR POLLUTION CONCENTRATIONS

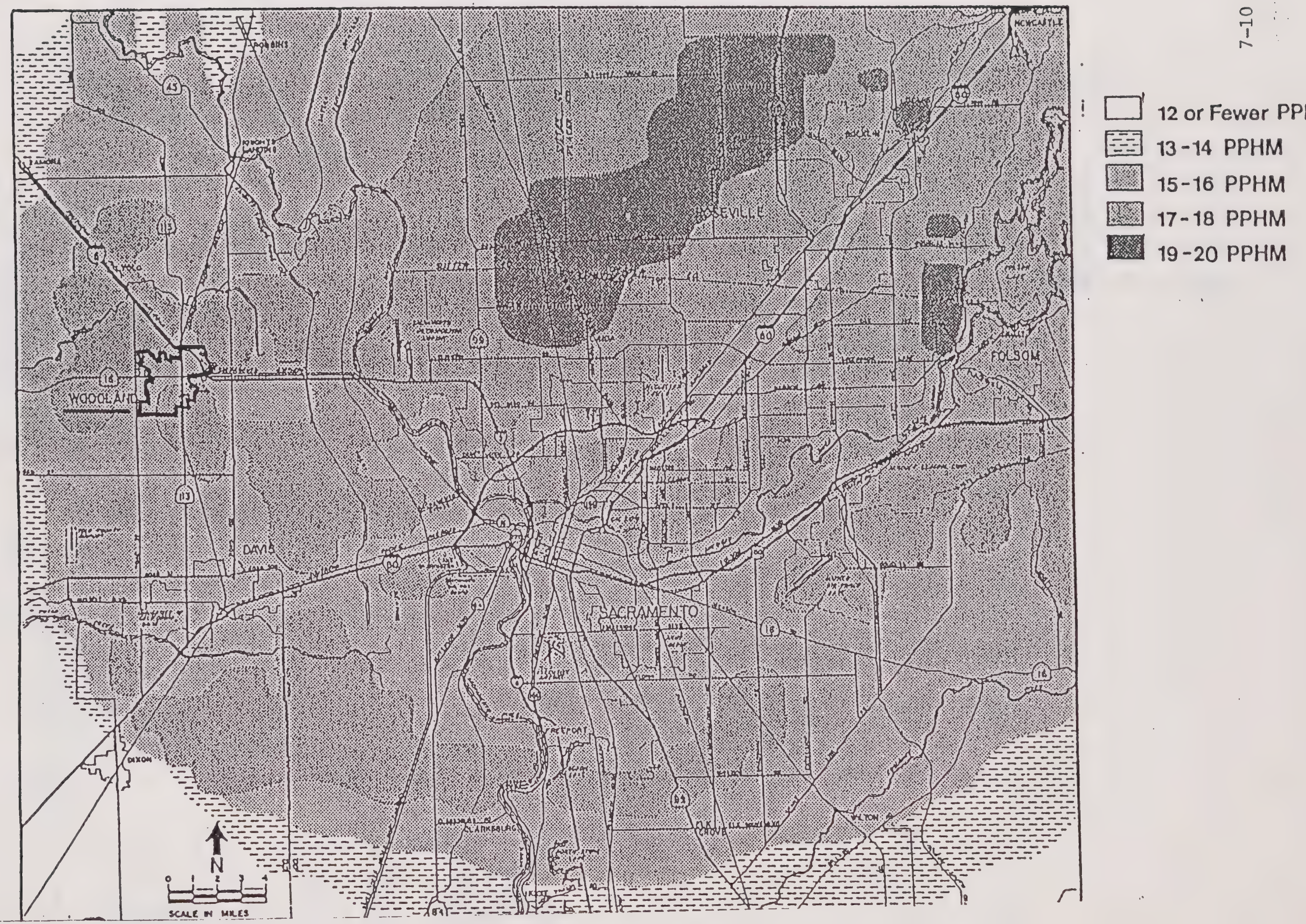
The modeling programs used in this study also converted projected emissions to projected air pollution concentrations by simulating in a computer the photochemical process that converts hydrocarbon emissions to ozone. The model that performed this simulation is called, interestingly enough, the SMOG model and is described later in this chapter. The following two maps depict the model-simulated ozone concentrations for specific conditions (date, time, and meteorology) for 1979 and for 1987 using the baseline emission inventory. The federal air quality standard is 12 parts per hundred million (PPHM).

Both maps can be characterized as showing concentric blobs of increasingly dense ozone concentrations centered downwind (northeast) from the urban area. Interestingly, lower levels of ozone appear directly adjacent to urban areas. These lower levels of ozone are due to "scavenging" of ozone by nitrogen oxides. The chemical reaction between ozone and nitrogen oxides is such that although nitrogen oxides contribute to higher ozone concentrations a few hours downwind, high concentrations of nitrogen oxides reduce ozone concentrations during the short term in the immediate area.

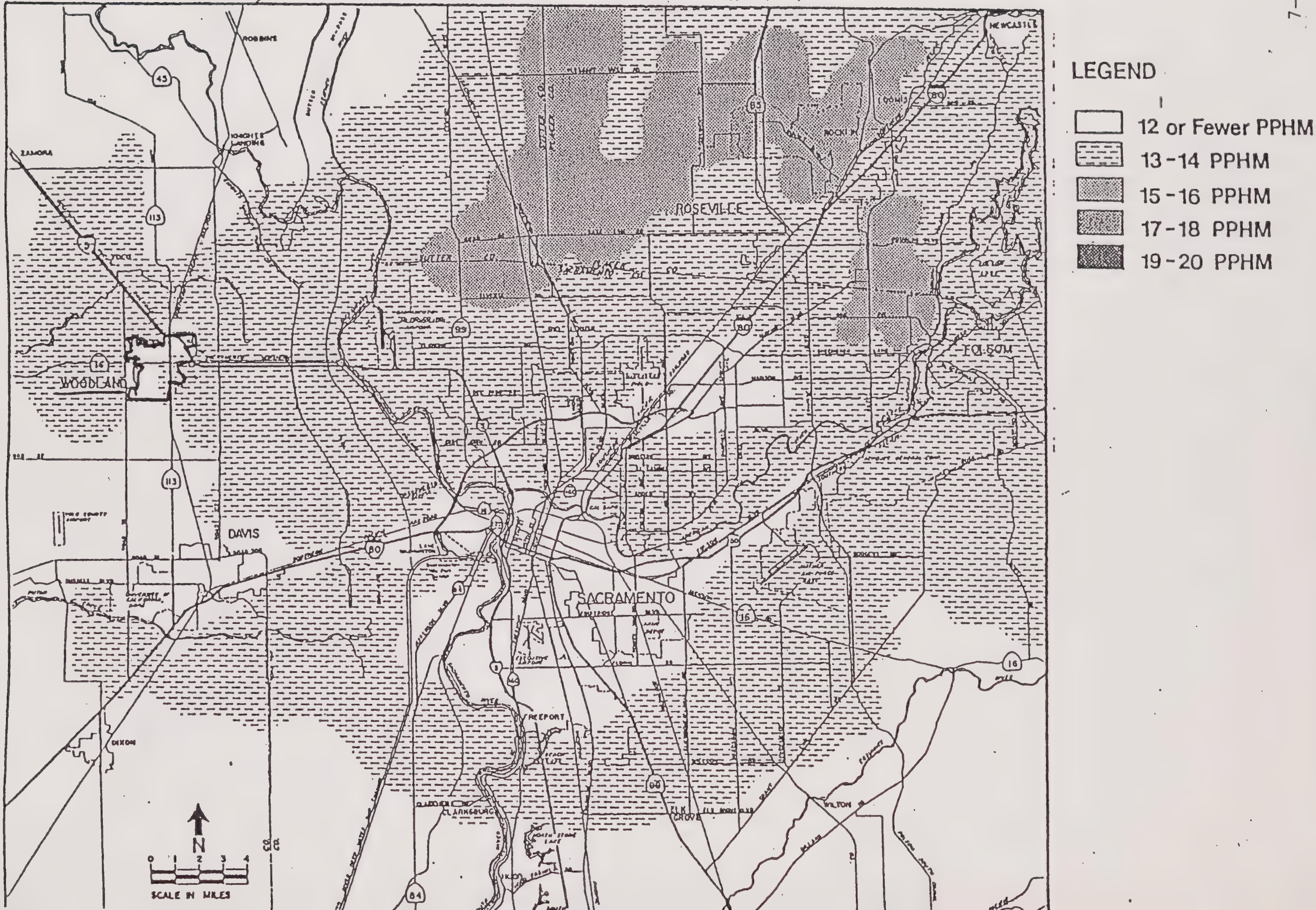
The 1979 simulation was checked against monitored data for the same date and time. The model closely replicated the monitored pollution concentrations throughout the urban area. The model over-predicts pollution levels in the western third of the modeling area. The simulation shown on the maps is for 2:00 p.m.

The 1987 map shows the baseline condition, which assumes only existing air quality controls. Even without the implementation of additional air quality controls, substantial improvements in air quality are projected to occur between 1979 and 1987. Also, with the exception of Rocklin and Orangevale, the highest ozone concentrations miss areas of high population density. Still, the 1987 baseline condition would subject large masses of population to moderately unhealthy air. The objective of this plan is to ensure healthy air throughout the Sacramento area.

1979 Ozone Concentrations



1987 Baseline Ozone Concentrations



7.0 AIR QUALITY

SOURCES

1. Final Environmental Impact Report for the Woodland Area General Plan (1981)

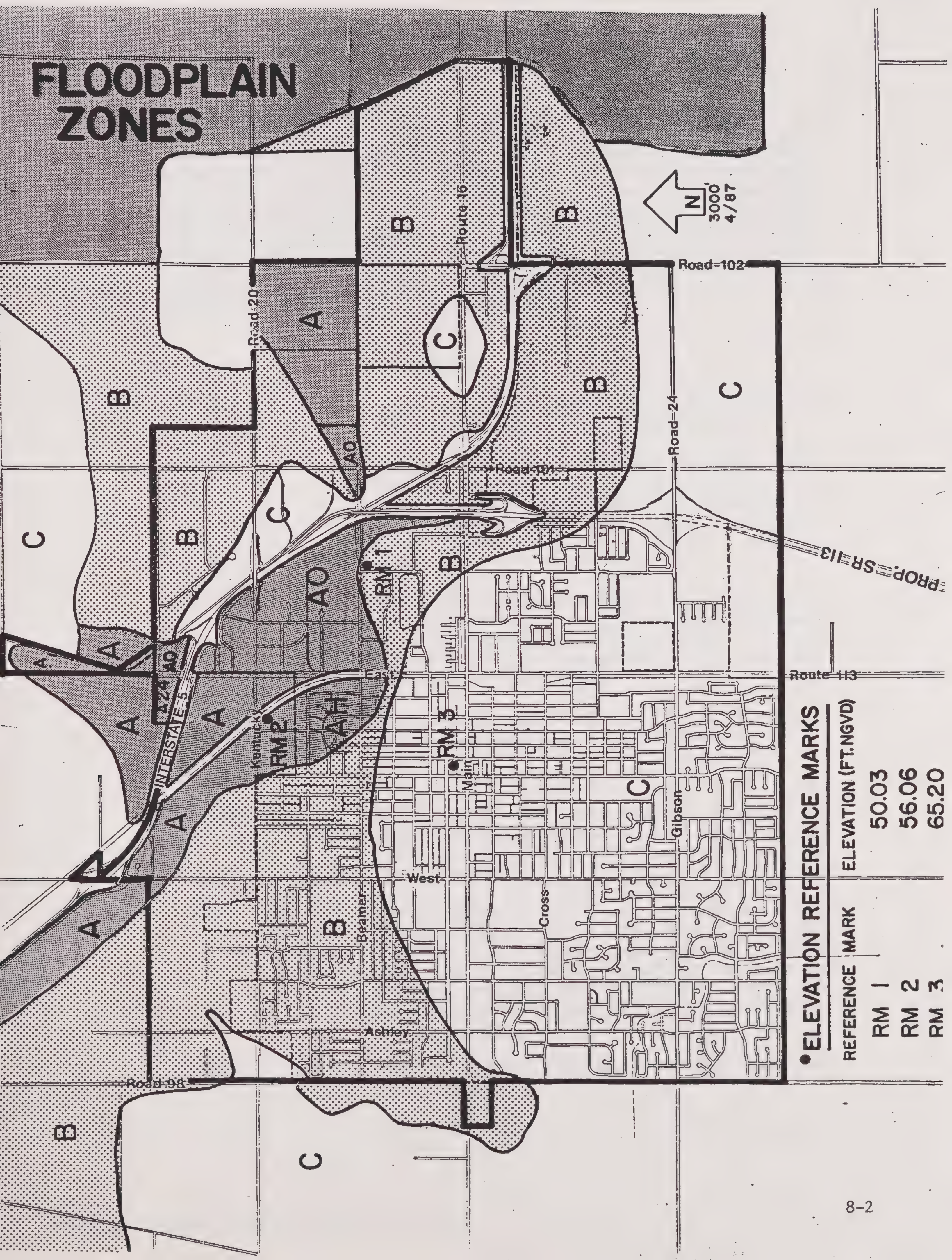
2. CEQA Air Quality Workshop (1987)

3. Air Quality Plan - Sacramento Area Council of Governments (1982)

Flood Plains

8. FLOOD PLAINS

The following map shows the location of flood plains in the Woodland area. Each zone noted is determined by the chance that one flooding occurance might happen during a 100 or 500 year time span. The map denoting areas with varying intensities during these different time spans, and flood plains that are located by intensity of annual flooding is located on page 8-2.


FLOODPLAIN ZONES
N
3000
4/87
Road 102
Road 20
Road 24
Road 101
Road 98
Route 16
Route 113
PROP. SR 113
INTERSTATE 5
Kentucky
East
Main
West
Gibson
Cross
Beamer
Ashley
RM 1
RM 2
RM 3
ELEVATION REFERENCE MARKS
REFERENCE MARK ELEVATION (FT. NGVD)
RM 1 50.03
RM 2 56.06
RM 3 65.20

The Flood Plain Overlay Zone is applied to areas identified by the official Flood Identification Map provided to the City by the Federal Insurance Administration in its "Flood Insurance Study" dated October 16, 1979, as amended. The map delineates those areas subject to flooding based upon evidence of past flood events and evaluation data pertinent to the hundred year flood or that which has a one (1) percent chance of occurrence in any one year. Based on evaluation of this map, the City seeks to eliminate or reduce flood losses by regulating building construction and land use within the Flood Plain Hazard Areas identified on the map. Refer to the map and accompanying flood zone descriptions.

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined. (Lowest floor elevation +1' or 1' above crown of street).
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined. (Lowest floor elevation 58' or above).
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A-24	(Lowest floor elevation + 16').
A-99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading). (No requirements).
C	Areas of minimal flooding. (No shading). (No requirements).
D	Areas of undetermined, but possible, flood hazards.

Drainage

9. DRAINAGE

9.A EXISTING DRAINAGE

A Storm Drainage Master Plan has been prepared by Brown and Caldwell (Oct. 1987), for the City of Woodland. It contains an outline and description of the existing Woodland Drainage System. Included are the major trunk lines and their area feeder systems. Figures show the entire drainage system for the city and the pumping system that takes the accumulated run-off to a creek on the outskirts of town. The following pages taken from the Master Plan describe the existing drainage system, general problems with the system as well as by planning area and possible solutions to the problems.

EXISTING DRAINAGE SYSTEM

Woodland's storm drainage facilities consist of collection systems, trunk systems and disposal systems. The collection systems include concrete curbs and gutters directing surface flows to drop inlets. These drop inlets allow the flows to enter catch basins (small underground structures that serve as the entrance to a storm drain pipe.) The storm drain pipes installed as a part of the collection systems are generally 36" or less in diameter and are called lateral lines. They convey flows from the collection system tributary areas to the trunk systems. The trunk systems include major underground storm drain pipes, 36" or larger in size, or open surface channels, conveying flows from the collection system tributaries to the disposal facilities. Disposal systems direct these flows to designated settling basins, canals or natural streams.

COLLECTION SYSTEMS

Woodland's collection systems installed in the newer portions of the City generally have extensive lateral storm lines allowing the placement of drop inlets at regular intervals. The pipes in these areas range from 12 to 24 inches in diameter, and together with frequent inlet placements, allow storm flows to be picked up in relatively small amounts at multiple locations.

In the older areas of the city, storm water must travel long distances in the streets before entering the storm drainage pipes. Generally lacking storm drain lateral lines, large areas are tributary to single inlets, causing the capacity of these inlets to be exceeded by flows from even small storms. Flows are carried through intersections in valley gutters, gutter culverts, or inverted siphons.

Valley gutters operate adequately during small storms. However, when large areas are tributary to a valley gutter, this gutter crossing the street must be relatively deep to contain the flow. Such deep valley gutters represent a potential traffic hazard, and an inconvenience to motorists if they must drive through as much as one to two feet of water.

Gutter culverts are pipes placed at grade in an intersection which carry gutter flows across an intersection. These culverts are usually four to eight inches in diameter and are, therefore, prone to frequent plugging. When plugging occurs, the gutter flows back up into the street.

An inverted siphon, sometimes called a bubble-up, consists of a pipe with inlets located on both ends used to carry gutter flow across an intersection. There are approximately 100 inverted siphons installed in various locations throughout the City. These inverted siphons frequently plug as a result of the small diameter pipes, plugging of the inlet grates, and the accumulation of debris at the bottom of the inlet. During the summer, this accumulation can cause odor problems associated with decomposition of leaves, grass and other debris. Plugging of the inverted siphons in the winter together with odor problems generated during the summer months, result in frequent complaints to City personnel by Woodland citizens.

In the newer areas, the storm drain lateral lines are adequate for placement of storm drain inlets in locations that prevent storm water flow across intersections. These frequent inlets allow storm flows to be picked up in relatively small volumes at various locations. In the older areas, the surface flows must travel long distances in the streets before entering the storm drainage lines. Large portions of the City are tributary to a few inlets resulting in the capacity of these inlets to be exceeded by flows even during minor storms.

Figure 9-1 shows the City's service areas drainage. The study area is served by four main trunks which carry drainage from west to east. The four trunks converge at River Road (Highway 16) and the extension of County Road 103. Two pumping stations pump the flow from the trunks into the Cache Creek Settling Basin north of River Road.

TRUNK SYSTEM

Each of the four major trunks in the existing drainage system are briefly described below.

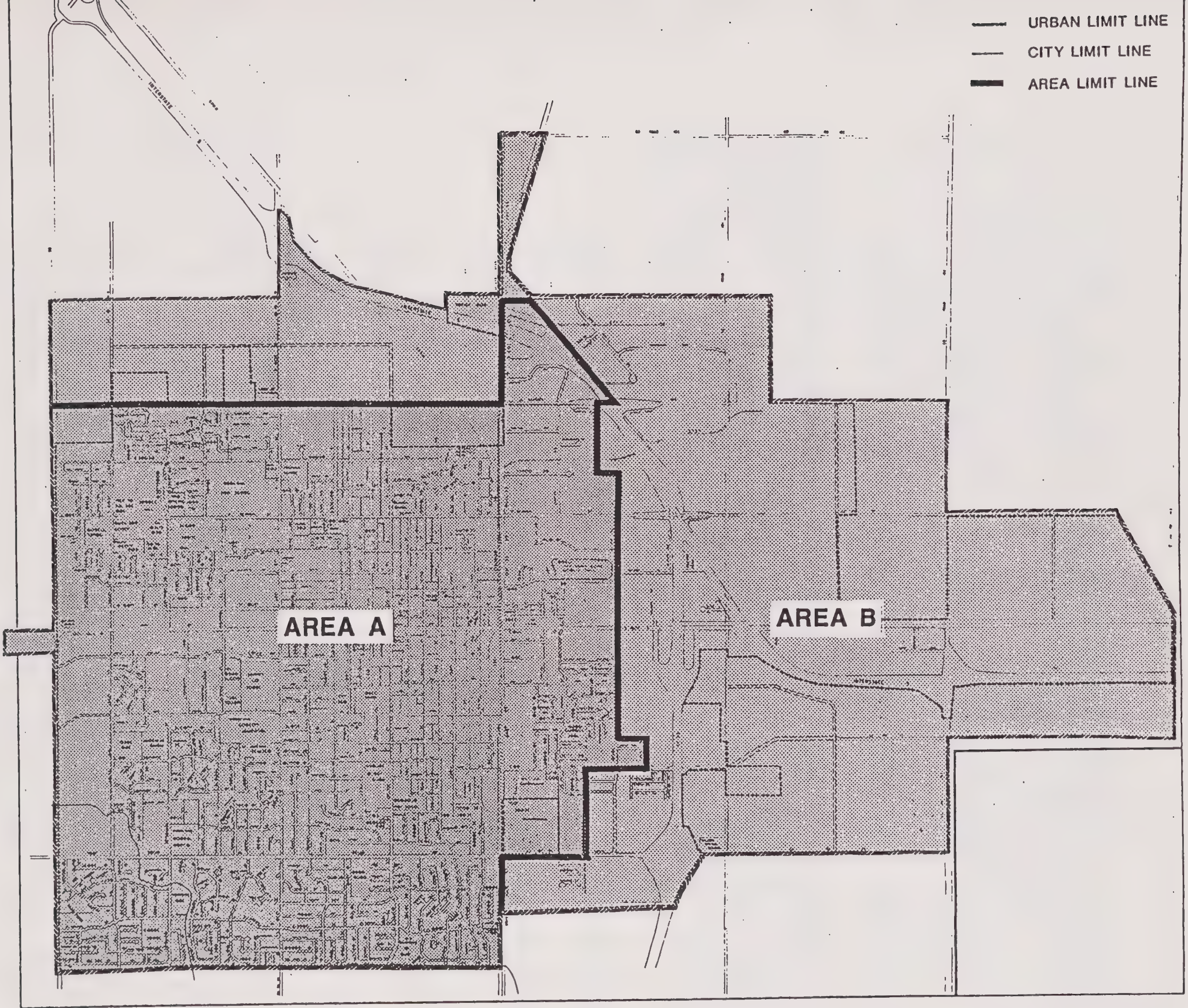
<u>Kentucky Avenue Trunk:</u> The Kentucky Avenue trunk extends from Ashley Avenue on its western end to a large open channel east of Road 102 on its eastern end. It serves a large, primarily residential area generally between Court Street and Kentucky Avenue in the area west of East Street. To the east of East Street, the trunk serves a partially developed industrial area which includes large parcels of land presently used for agriculture. The trunk system includes:

1. A 36-inch pipe in Ashley Avenue between North Beamer Street and Kentucky Avenue.

2. Storm drain piping in Kentucky Avenue which varies from a 42-inch-diameter pipe at Ashley Avenue to twin 54-inch pipes at Road 101.

3. A 2,400-foot-long section of concrete-lined channel east of Road 101.

4. Approximately 5,400 feet of unlined open channel east of the concrete-lined channel. This channel ends in a large unlined open channel approximately 2,600 feet east of Road 102. The large open



City Service Areas

channel runs southeastward approximately 5,800 feet to the pump station located north of River Road, and collects drainage from both the Kentucky Avenue and the Court Street/Beamer Street trunks.

5. Storm drain piping in Beamer Street varies from a 30-inch-diameter pipe at West Street to a 36-inch-diameter pipe at East Street.

6. A 36-inch pipe in East Street which carries the flow from the Beamer Street piping, north to the main trunk line in Kentucky Avenue.

Court Street/Beamer Street Trunk: This storm drainage trunk is located in Court Street from Cottonwood Street to Fifth Street, then runs northeastward to Beamer Street near its intersection with I-5. The trunk continues eastward in Beamer Street to the large open channel along the eastern boundary of the study area. This trunk serves a primarily commercial area north and south of Court Street between Road 98 and East Street, and a partially developed area between Kentucky Avenue and East Main Street east of East Street. The trunk system includes:

1. Storm drain piping in Court Street which varies from a 36-inch-diameter pipe at Cottonwood Street to a 48-inch-diameter pipe at Fifth Street.

2. A 48-inch-diameter pipe which runs generally northeast from the Court and Fifth Street intersection in Fifth Street, Lemen Avenue, and Matmor Road to Beamer Street at Matmor Road.

3. Storm drain piping in East Beamer Street (County Road 21) which varies from a 48-inch pipe at Matmor Road to twin 48-inch pipes at Road 102.

4. An unlined open channel which runs east from Road 102 to the large unlined open channel along the study area's eastern boundary.

East Main Street Trunk: The East Main Street trunk is a 36-inch pipe which extends from East Street near Pendegast Street northward to East Main Street, then runs eastward in East Main Street (River Road) to the pumping station at Road 103. This trunk serves a relatively small urban area south of East Main Street and east of East Street, and a partially developed industrial area along East Main Street. The trunk includes:

1. A 36-inch storm drain pipe which runs from East Street near Pendegast Street to East Main Street at Johnston Street. The pipe runs east from East Street approximately 600 feet, then parallels Denise Drive north to Oak Avenue, runs east in Oak Avenue to Johnston Street, and north in Johnston Street to East Main Street.

2. A 36-inch storm drain pipe which runs in East Main Street from Johnston Street to the pumping station at Road 103.

Gibson Road Trunk: This trunk extends from a detention pond near Ashley Avenue and El Dorado Drive north to Gibson Road, then runs in Gibson Road from Ashley Avenue to the extension of Road 103, thence north from Gibson Road to the pumping station at Road 103. The trunk serves a large residential area generally between Pendegast Street and the study area's southern boundary west of East Street, a partially developed residential area north of Gibson Road between East Street and the future Highway 113 alignment, and a partially developed area south of Gibson Road west of the future highway. The trunk system includes:

1. A 36-inch pipe in El Dorado Drive between Brown Avenue and Ashley Avenue.

2. A 42-inch pipe in Saratoga Drive between Colgate Court and Ashley Avenue.

3. A stormwater detention pond located north of El Dorado Drive between Ashley Avenue and Road 98. Flow to the pond is controlled by a gate on the trunk at Ashley Avenue and Gibson Road. Control of the gate is based on water surface elevation at Gibson Road and West Street.

4. A 42-inch pipe in Ashley Avenue between El Dorado Drive and Gibson Road.

5. Storm drain piping in Gibson Road which varies from a 42-inch pipe at Ashley Avenue to twin 48-inch pipes at Road 102.

6. Approximately two miles of unlined open channel from Road 102 and Gibson Road to the pumping station on the south side of Main Street.

DISPOSAL SYSTEM

Each of the four major storm drain trunks carry flows to two pumping stations located at River Road and Road 103. North of River Road is a pumping station located at the terminus of a large unlined channel to which the Kentucky Avneue and Court Street/Beamer Street trunk discharge. This station is equipped with two 30-inch vertical propeller pumps with 125 horsepower motors. It is equiped with fixed trash screens at each pump and also a fixed trash rack in the channel approximately 100 feet upstream of the pumps.

If the Cache Creek Settling Basin is not flooded, storm water can pass through the levee in a gravity pipeline to a channel on the north side of the settling basin levee along River Road. Figure 9-2 shows the location of the pumping station, the Cache Creek Settling Basin, and the channel.

On the south side of River Road, the pumping station contains one storm pump together with a smaller pump used during the summer months. Flows are transmitted to this pump station via the Gibson Road Trunk along the extension of Road 103 and via the East Main Street Trunk. A gravity pipeline under River Road allows storm water to flow through the levee when the Cache Creek Settling Basin is not flooded. The pipe under River Road connects the two

pumping stations so that their operations are interrelated. When the Cache Creek Settling Basin is flooded, storm water flows are pumped by each station through separate pipelines into the Basin.

The present pumping stations have a capacity of about 150 cubic feet per second (cfs). Peak ten-year storm flows, under existing development conditions, are estimated in the Storm Drainage Master Plan to be 1,156 cfs or approximately eight times the existing pumping capacity. Presently, flows to the pumping stations are much less than the ten-year design resulting from the inability of the trunk system to deliver such flow.

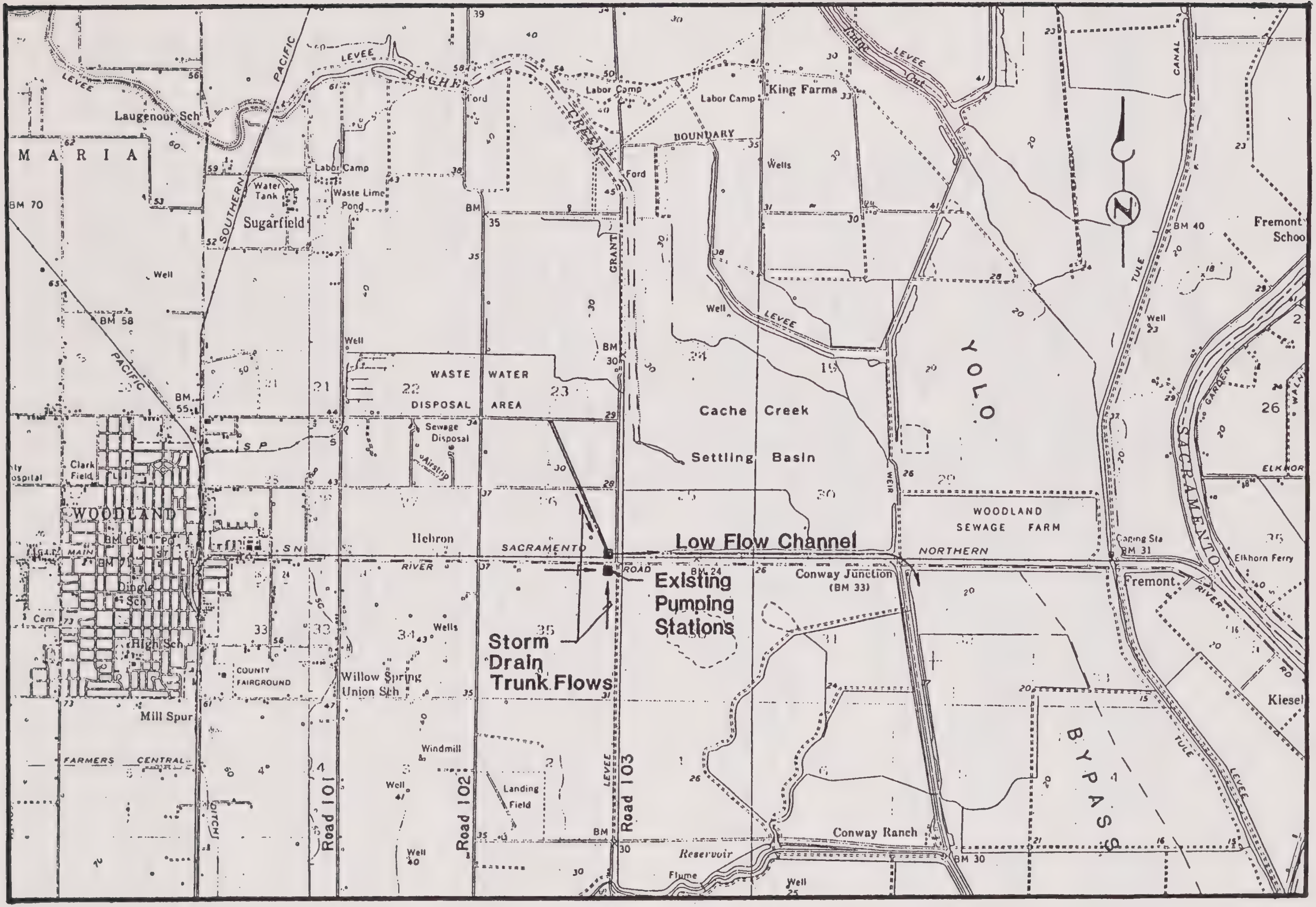


Figure 9-2 Existing Pumping Station Location

9.B EXISTING DRAINAGE PROBLEMS

The problem areas which were identified through field review with City engineering and maintenance staff are listed in Table 9-1. Table 9-1 lists the problem at each of the locations and some of their potential solutions. Table 9-2 lists several problems which occur system-wide. The problems can generally be grouped into the following types:

1. Lack of adequate trunk capacity. This causes high hydraulic grade lines on the trunks which prevents local low-lying areas from draining.

2. Lack of storm drains to pick up flows from agricultural areas tributary to the city system. This causes street flooding along the study area boundary in several locations.

3. Clogging of pumping station trash racks.

4. Unlined and unfenced open channels which are subject to clogging at culvert crossings due to plugging with tumbleweeds and other debris. The channels require extensive maintenance, but are in some places not provided with adequate maintenance access.

5. Plugging of drop inlet grates.

6. Lack of an adequate lateral storm drain system.

In the newer area, the piping is adequate for placement of storm drain inlets to prevent flow across intersections. Frequent inlets allow storm flows to be picked up in relatively small amounts at various locations. In the older area, flow must travel long distances in the streets to enter the storm drainage system. Large areas are tributary to single inlets which causes the capacity of the inlets to be exceeded by flows from even small storms. Plugging of a single inlet by leaves or other debris can cause street flooding over a large area.

Without an adequate lateral system drainage flows must be carried through intersections in valley gutters, gutter culverts, or inverted siphons (bubble-ups). Valley gutters operate satisfactorily for small flows. However, when large areas are tributary to a valley gutter, the gutter must be relatively deep to contain the flow. This situation presents potential traffic hazards, and a nuisance to motorists who must drive through one to two feet of water in an intersection.

Gutter culverts are pipes placed at grade in an intersection which carry gutter flows across an intersection. A typical gutter culvert is shown on Figure 9-3. These culverts are usually four to eight inches in height and are, therefore, subject to frequent plugging. Plugging of the culvert causes gutter flows to back up into the street until flow can occur across the surface of the intersection.

TABLE 9-1

EXISTING DRAINAGE PROBLEMS BY PLANNING AREA

Location	Problem	Probable Cause	Potential Solution
Planning Areas			
B) Coral Drive	Street flooding at drain inlets	Sump area--outlet storm drains inadequate; gutter inlets susceptible to clogging.	Large capacity side-opening type inlet with new storm drain to West Beamer Street
Brown's Corner	Runoff flows from agricultural lands to west cause street flooding	Inadequate storm drain conveyance system on West Main Street.	New storm drain and inlets to serve area.
C) Woodland Avenue between Palm Avenue and Southern Pacific Railroad	Street flooding	Lack of storm drain system exceedence of gutter and inlet capacities by tributary flow. Plugging of inlets in sump area.	Construction of new storm drain and inlets at Woodland and Palm Avenues.
Pershing Avenue between Beamer Street and Keystone Avenue	Street flooding	Lack of adequate gutter grade to convey tributary flow.	Construction of new storm drain laterals and inlets
North College Street between West Beamer Street and Woodland Avenue	Street and intersection flooding, odor problems	Long gutter flow lengths and use of inverted siphons at intersections.	Elimination of inverted siphons, and shortened gutter flow through construction of new storm drain lateral and inlets.
D) Road 101 at Churchill Downs	Flooding of intersection and County Road by runoff from agricultural land to the northwest.	Lack of storm drainage facilities.	Construction of inlets and storm drain pipe or ditch.

Location	Problem	Probable Cause	Potential Solution
G) Gibson Road and Road 98	Runoff flows from agricultural lands to west cause street flooding	Inadequate capacity in Gibson Road storm drains to carry flows, inadequate inlets.	Possible diversion of peak flows to dentention basin at El Dorado Drive; new inlets; possible increase in Gibson Road storm drain capacity.
California Street Greenwood Drive area	Relatively frequent and extensive street flooding over approximately a four-block area	Large sump area with inadequate storm drain outlet capacity.	Construction of new storm drains and inlets
Cottonwood Street near Boxwood Drive	Street flooding	Low spot in street with inadequate storm drain outlet capacity.	Construction of new storm drains and inlets
West Casa Linda Drive between Westway Drive and Harley Avenue	Street flooding, odor problems	Excessive gutter flow length and use of valley gutters and inverted siphons at intersections	Construction of new storm drains and inlets
H) Main and Elm Streets	Intersection flooding, difficult maintenance	Culvert crossing for gutter flow. Culvert susceptible to plugging.	Elimination of culvert by extension of storm drain on Elm Street. New inlets south of Main Street.
Cleveland Street between Clanton and Marshall Avenue	Summer odor problems, intersection flooding	Inverted siphons at intersections.	Elimination of inverted siphons through construction of new storm drain and inlets.

Location	Problem	Probable Cause	Potential Solution
K) Miramonte Drive between West Street and Del Ray Street	Street flooding	Relatively low evaluation, high HGL on Gibson Road storm drain.	Relief of Gibson Road storm drain, or increase in capacity.
County Road 99, College Street, South Sixth Street at city limit	Runoff from agricultural land to south causes street and intersection flooding	No provision for transport of flows from lands outside city limit in City System.	Possible use of Central Ditch for diversion, or increased capacity in City system.

TABLE 9-2

GENERAL DRAINAGE PROBLEM AREAS

Location	Problem	Probable Cause	Potential Solution
System-wide	Summer odor problems; intersection flooding; high maintenance requirements	Inverted siphons (bubble-ups") at intersections to carry gutter flow. Low capacity and susceptibility to clogging causes intersection flooding. Trapped water and debris in inverted siphon causes odor problems in warm weather.	Elimination of inverted siphons through provision of new storm drain pipes.
System-wide	Street flooding at storm drain inlets; high maintenance requirements	Clogging of inlets by leaves and other materials; lack of adequate inlet capacity for design flows.	Provision of additional inlets; change to side inlet or combination type inlet for all new construction.
System-wide	Intersection flooding, traffic hazards; high maintenance requirements	Long gutter flow lengths and use of valley gutters in intersections. Use of culverts to carry gutter flow across intersections. Culverts are susceptible to clogging.	Provision of storm drains and inlets to limit gutter flow length and depth of flow in gutter to acceptable level in design storm. Elimination of valley gutter and gutter culverts.
Eastern portion of system	Reduced trunk capacity in ditches; high maintenance; lack of access	Clogging by tumbleweeds and debris at culvert crossings. Weed growth.	Replace ditches with pipe. Fence to prevent debris from entering. Provide access roads
Pumping stations at River Road and Road 103	Clogging of trash racks	Fixed trash rack design	

Figure 9-5 shows a typical inverted siphon (bubble-up). There are approximately 100 inverted siphons installed in various locations in the city system to carry flows across intersections not served by a lateral storm drain. The inverted siphons frequently plug due to small diameter pipes, plugging of the inlet grates, and the collection of debris in the bottom of the street crossing. In the summer, collection of debris and low flows cause odor problems associated with the decomposition of leaves, grass, and debris in the bottom of the inverted siphons. Plugging of the inverted siphons in the winter and odor problems in the summer are the cause of frequent complaints to City staff by property owners.

In general, replacement of grate style drop inlets with combination style inlets is recommended to improve local drainage system performance and decrease maintenance calls due to plugged inlets during storms. However, combination style inlets also have the potential negative effect of allowing more debris to enter the storm drain system. Therefore, their use should be limited to areas in which minimum pipe size criteria are enforced. Their use in areas with smaller pipes may cause plugging within the storm drain piping system. An eductor truck or similar pipe cleaning equipment should be used to prevent buildup of debris in the system, and improved pump station trash racks will be required to prevent transported debris from clogging the pump station inlet.

RECOMMENDED SOLUTIONS

This initial analysis of the existing drainage system also led to the division of the study area within the urban area line into two districts.

Figure 9-1 shows the division of the area within the urban limit into Area A and Area B. Fully developed for residential and commercial uses, and having an extensive storm drainage lateral and trunk system in place, Area A is entirely within the City limits. Area B is virtually undeveloped and the storm drainage system consists only of the drainage channels installed as the trunk system for Area A. Sizable portions of Area B are outside the City limit line and most of the land in the eastern portion of Area B is designated for industrial uses.

An analysis of the present drainage system indicates that Area A facilities are grossly under capacity to handle flow from a ten-year storm and that significant improvements are needed to even handle runoff from a two-year return period storm. In consideration of the high costs required to meet a ten-year storm level, Area A was evaluated for the improvements necessary to meet two-year design standards and Area B to meet ten-year design standards.

In Woodland the mean annual precipitation is approximately 17 inches with over 90 percent of this percipitation occuring from October to April. The terms two-year and ten-year storms discussed in the master plan are defined as follows:

> Two-Year Storm - a particular precipitation pattern with a probability of occurrence once every two years. In Woodland, this is assumed to be 1.9 inches in a 24-hour period. The level of intensity will vary through the 24 hour period.

FIGURE 9-3

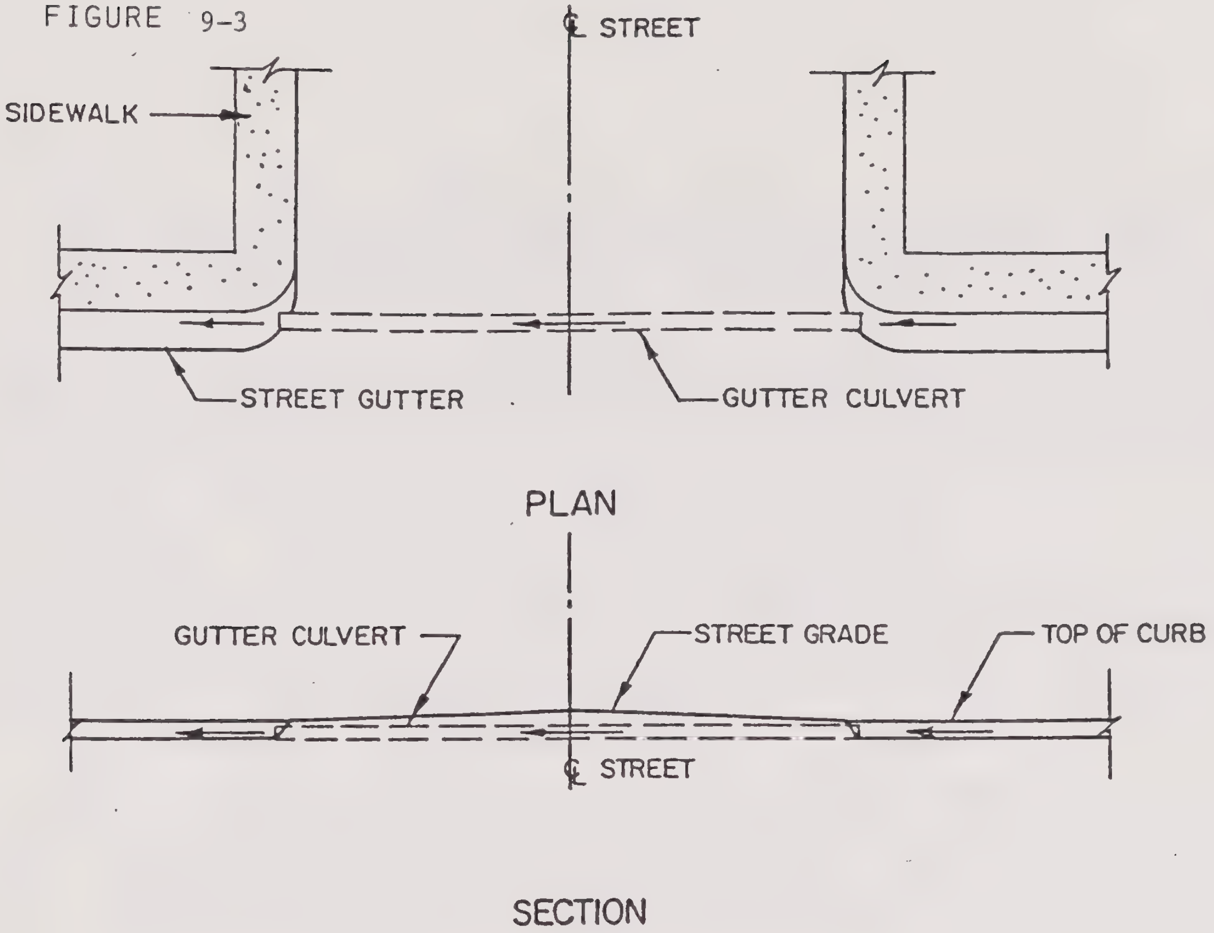


Figure 9-4 Typical Gutter Culvert

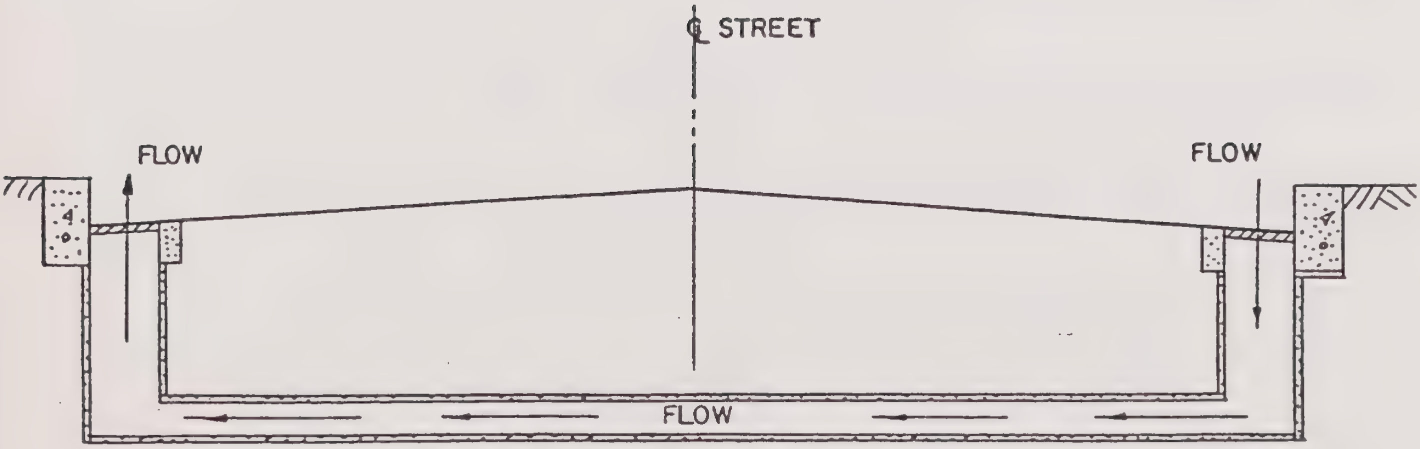


Figure 9-5 Typical Bubble-up System

Ten-Year Storm - a precipitation pattern with a probability of occurrence once every ten years. This is assumed to be 3.1 inches in a 24-hour period for the Woodland area and the level of intensity will vary during the 24 hours.

Several alternatives have been formulated to relieve existing drainage problems and provide for adequate capacity to convey increased flows from new urban development and to carry design flows from existing development. Recommended atlernatives have been developed for the Area A lateral and trunk system, the Area B trunk system and the disposal system.

The recommended project provides for a two-year level of service for Area A. All trunks in the area will be designed to carry the two year-storm flow. In addition, lateral lines will be extended to provide efficient conveyance of the two-year flow from individual drainage areas to the trunk system. The improvements recommended by Brown and Caldwell Consulting Engineers are designed to provide a uniform service level to all of Area A.

Following a review of the draft master plan in March 1987, the City staff requested an analysis of an additional alternative formulated to reduce the total improvement costs. This alternative called for no improvements to the Area A system, but allowed for a 10-year level of service for Area B. Design flows in Area B will be based on tributary flow from Area B plus the existing capacities of Area A trunks.

For purposes of this report, the project will be deemed to include both improvements to Area A and to Area B as recommended by Brown and Caldwell. This approach will allow consideration of all the possible impacts and also provide increased flexibility in evaluating a recommended project in the final master plan.

The proposed master plan improvements are shown in the Storm Drainage Master Plan and illustrate the engineer's recommendations to provide a two-year level of service to Area A, and a ten-year service level for Area B. Major components of this project include:

1. 33,000 lineal feet of new storm drainage trunk pipelines (36 inches diameter or larger) in Area A.

2. 80,850 lineal feet of new storm drainage lateral pipelines (less than 36 inches in diameter) in area A.

3. 102,200 lineal feet of new storm drainage trunk pipelines in Area B (36 inches in diameter or larger).

4. 43,700 lineal feet of new or improved open channel trunks in Area B.

5. A new pumping station at River Road and Road 103 with an ultimate capacity of approximately 900 cfs.

6. Three major storm water detention basins with a total storage volume of approximately 400 acre-feet.

Area A Improvements

A major new trunk will be located in the area between Main Street and Gibson Road, and will serve an older portion of the City not presently provided with a storm drain trunk or lateral system. This trunk will also handle flows from a portion of the area now tributary to Court Street and Gibson trunk lines. Flows will be diverted by installation of new lateral lines to this new trunk line. This new trunk will eliminate the need for improvements to the Court Street trunk. However, a new parallel pipe will still be needed on the Gibson Road trunk.

A storm water detention pond will be required to reduce peak flows and to lower hydraulic grade lines in the downstream portion of the system. This detention pond will be situated in an existing depression created during previous freeway construction. This detention basin will require a small pumping station to drain the pond.

Construction of a new storm water detention basin north of Kentucky Avenue near the intersection of Interstate 5 and the Southern Pacific Railroad will require a new trunk line in College Street to divert flows on the Beamer Street trunk north to the detention pond. This basin also provides relief to the Kentucky Avenue trunk through diversions of flows to the basin. The proposed basin will have a volume of approximately 100 acre-feet.

The recommended Area A improvement program also includes construction of a detention basin north of Gum Avenue and west of Road 101. The City has already designed a drainage system which incorporates this basin, and construction of this facility has been completed. Although both the proposed basin and the newly constructed detention basin are situated in Area B, these facilities benefit the trunk system in Area A.

Area B Improvements

Recommended improvements in Area B are proposed to carry the ten-year flow from this area after complete development and to convey the two-year flow from Area A through Area B.

In addition to the detention facilities proposed as a part of the Area A trunk system improvements, a third detention facility is proposed at the southwest corner of Kentucky Avenue and Road 102. A major portion of the total flow from the study area is to pass through storage basins where existing City wastewater storage ponds are presently located. These ponds will be converted from their present use to allow peak flow reduction for downstream trunk lines and to reduce pumping station capacity requirements. Approximately 220 acre-feet of storage is available in three existing ponds. This large facility will also improve the overall reliability of the entire system through its ability to store storm water for short periods in the event of pumping station failure. A 900 cfs pumping station is required as a part of this improvement.

Major new storm drain trunk lines are provided in Area B to serve the entire area within the urban limit line. In addition to these new trunk lines, the existing open channels will be retained and improved. The advantages of open channels are high capacities, low capital cost and high storage volume which

tends to reduce downstream peak flows. The disadvantages identified in the master plan report include higher maintenance requirements, potential safety problems, and possible plugging at road crossings. The existing system contains a number of open channels which require relatively high maintenance, including resolution of plugging problems with tumbleweeds at road crossings, control of weed growth in the channels and procedures required to overcome inadequate maintenance access facilities.

Even though these problems can be eliminated through replacement of open channels with closed conduits, such an alternative would be very expensive. The master plan report estimates the approximate cost for replacement piping at $245 to $319 per lineal foot. An unlined open channel, adequate to transport the same flow at the same slope is estimated to be approximately $48 per lineal foot, including the estimated costs for additional right-of-way. Compared to the high capital cost difference, the consulting engineers consider the higher maintenance costs for open channels to be a preferred alternative.

The recommended project includes open channels in several locations within Area B. To minimize maintenance problems and ensure reliable performance, the master plan report recommends that the channels:

> "... be constructed in areas along the urban limit line or Interstate 5. In these cases, the channel can be located along the side of road so that no development will occur adjacent to the channel. This prevents the need for frequent road and driveway crossings."

> "... include fencing along both sides. This will prevent tumbleweeds and other debris from getting into the channel and will also reduce the potential safety hazards associated with the channels."

> "... include an access road along their entire length and access ramps between each major road crossing. This will help to reduce maintenance costs and improve reliability."

> "... not be located in areas planned for residential development where they would be aesthetically less desirable and present higher safety hazards."

With these proposed restrictions and design requirements, these channels are intended to provide reliable performance at a significantly lower equivalent annual cost than closed conduits.

Pumping Station. Area B channels converge at River Road and Road 103, where the existing City storm water pumping stations are situated. These existing stations and influent facilities have several design deficiencies which compound maintenance problems. The stations have a combined capacity of approximately 150 cfs. Design flows at development buildout are estimated to reach approximately 900 cfs in the recommended project. A new pumping station with adequate capacity to convey this flow is included in the proposed recommended plan.

This station will be designed with mixed-flow or axial-flow pumps driven by electric motors. A total of six or seven identical storm pumps and a small summer flow pump will ultimately be required. This new station will also include one standby pump in excess of design flow. When the U.S. Army Corps of Engineers constructs higher levees at the Cache Creek Settling basin, the pumping stations will be modified to meet this change.

9.0 DRAINAGE

SOURCES

1. Draft EIR, Wastewater Facilities Master Plan, City of Woodland, CA 1985

2. ACTION PLAN - City of Woodland 1979

3. STORM DRAINAGE MASTER PLAN, CITY OF WOODLAND, Brown and Caldwell, 1985

Water Quality

10. WATER

Water is currently provided within the City of Woodland from groundwater. The City owns and operates 21 water wells which are shown on Figure 10-1. Tables 10-1 and 10-2 provide data on the wells. The wells are distributed throughout the city resulting in equalized pressure and economy of distribution piping. Average annual consumption is currently just over 9 mgd (million gallons per day). Peak month water use factors for single family residential, multi family residential, commercial, and industrial developments were determined to be 6,000, 7,000, 2,000, and 1,200 gallons per acre per day. The existing water supply capacity is about 49 mgd. The groundwater supply therefore appears adequate and the groundwater basin is not being overdrafted at this time.

The water distribution system consists entirely of cast iron and ductile iron pipe, most of which has been constructed since the mid 1950's. Because of the placement of wells throughout the city, distribution pipelines larger than 12" are not required. The system performs quite well under critical peak hour and peak day conditions.

Water quality from all of the wells currently meets the requirements of the State of California for domestic water supplies. The water presently has no detectable contamination due to agricultural or industrial chemicals.

In 1985, the City adopted a Water System Master Plan which described the existing system and outlined the steps to be undertaken to improve and expand the existing system. The section in "Future Water Supply" states that ultimate development to the urban limit line will result in a peak hour water demand of 52.5 mgd unless conservation practices or other use patterns are altered. The addition of four new wells would allow the City to meet the peak hour demand. Other improvements to the water distribution system were also identified in the Master Plan such as the installation of a telemetry system to monitor the wells, adding fire hydrants throughout the city to comply with the 300 foot spacing criteria, and making minor system improvements to complete major loops and strengthen the system.

FIGURE 10-1

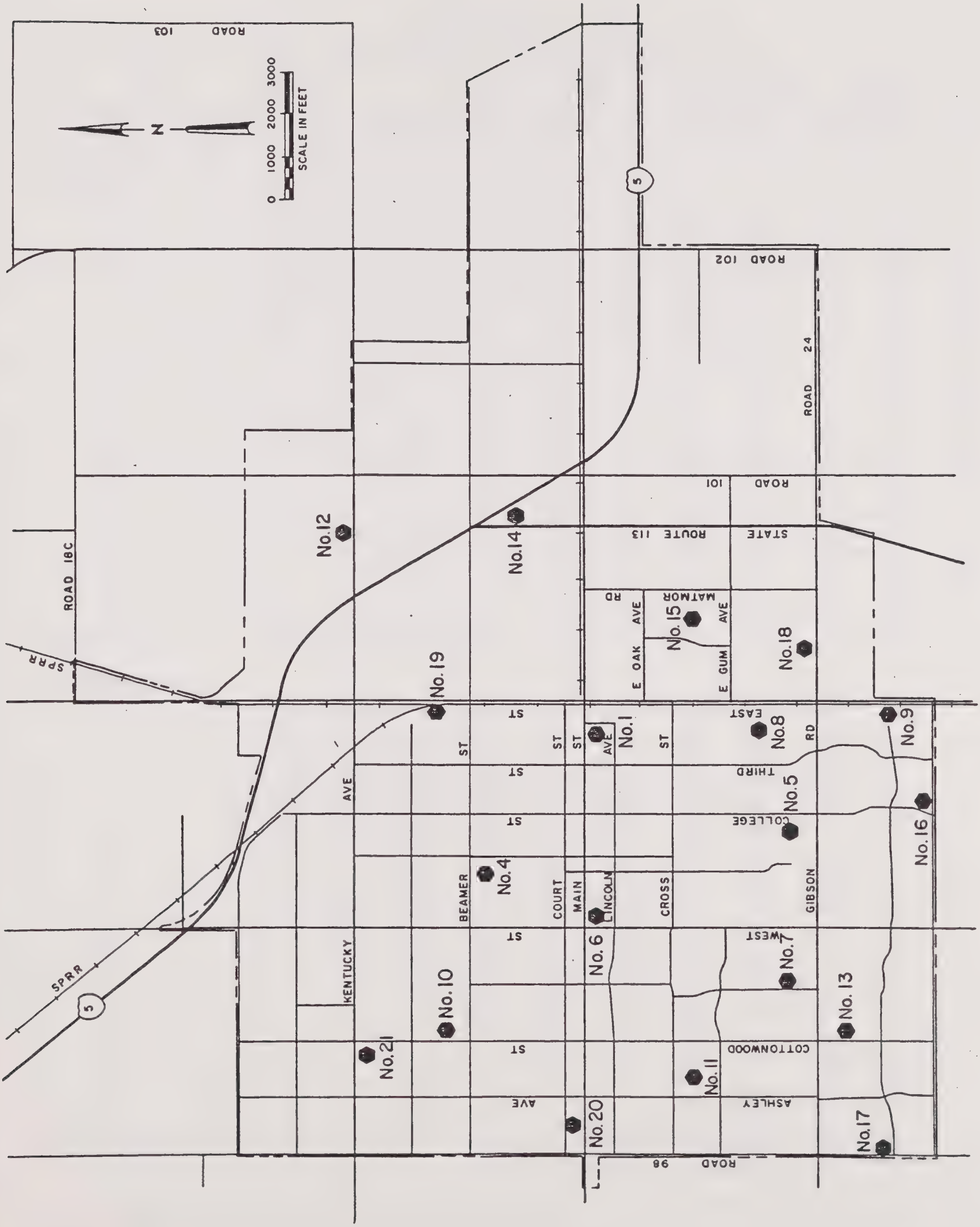


Fig. 10-1 LOCATION OF EXISTING WELLS

Table 10-1

DEPTH TO STANDING GROUNDWATER(a)

Well No.	73	74	75	76	77	78	79	80	81	82	83	84
	YEAR											
March:												
1		50	49	64	85	72	51	47	46	43	31	27
3		45	44	64	80	56	44	40	45	--	--	--
4		41	42	62	77	76	52	48	50	50	59	34
5		42	38	53	75	71	66	63	64	58	50	32
6		43	46	57	64(b)	59	62	57	54	54	46	37
7		43	42	63	85	77	56	51	48	44	44	29
8		36	37	52	69	52	47	44	41	38	28	23
9		--	--	--	80	56	50	47	45	42	31	27
10		--	--	--	--	--	--	--	--	45	40	32
11		60	58(b)	48	105	86	66	61	56	58	46	38
12		44	34	53	69	68	53	37	37	34	30	20
13		--	62	99	95	76	70	69	52	63	52	44
14		--	--	--	71	50	43	39	35	36	25	21
15		--	--	--	--	58	45	41	40	37	29	24
16		--	--	--	--	75	66	64	58	62	52	47
17		--	--	--	--	74	67	58	50	53	41	33
18		--	--	--	--	68	50	48	46	44	38	32
19		--	--	--	--	--	--	--	--	42	53	29
20		--	--	--	--	--	--	--	--	53	41	36
21		--	--	--	--	--	--	--	--	54	54	39
Average(c)		45	43	57	79	70	57	51	50	47	42	30
September:												
1	88	83	90	92	108	86	104	79	102	75	50	
3		82	80	96	109	80	91	75	--	--	--	
4	81	76	83	88	106	86	111	80	109	101	73	
5	76	70	73	94	111	95	103	94	103	85	64	
6	80	68	75	90(b)	108	87	106	92	84	70	59	
7	75	69	77	99	126	86	106	87	103	87	60	
8	73	74	75	85	98	78	105	73	90	64	41	
9	--	--	--	93	108	83	89	80	87	72	51	
10	--	--	--	--	--	--	--	--	90	77	56	
11	100	90	56	110	135	99	128	88	97	69	55	
12	84	80	84	86	118	76	108	70	138	71	60	
13	--	--	105	115	128	106	140	95	118	89	71	
14	--	--	--	83	102	88	100	75	92	88	48	
15	--	--	--	--	110	81	104	77	100	76	51	
16	--	--	--	--	129	96	112	96	110	116	67	
17	--	--	--	--	--	89	104	77	96	95	72	
18	--	--	--	--	--	100	118	98	100	102	68	
19	--	--	--	--	--	--	--	--	--	108	55	
20	--	--	--	--	--	--	--	--	90	85	50	
21	--	--	--	--	--	--	--	--	95	71	64	
Average(c)	82	76	77	93	114	87	109	83	103	78	58	

(a) Feet below center line of discharge pipe.
(b) Estimated.
(c) Wells 1, 4, 5, 6, 7, 8, 11, and 12 only.

Table 10-2
WELL DATA (1)

Well No.	Year Drilled	Casing Depth Feet	Casing Diameter Inches	Depth Surface Seal-Feet	Perforations Feet	Specific Capacity (2) GPM/FT. Drawdown
1	1961	484	16	100	69	340±
4	1955	484	0-201,16" Then Reduced	90	80	166±
5	1955	452	0-212',16" 212-452',12"	100	43	123±
6	1977	503	16	90	98	294±
7	1956	485	0-200',16" 209-485',12"	106	60	76±
8	1958	471	0-204',16" 207-471',14"	72	48	81
9	1960	470	16	80	71	114
10	1960	504	16	138	76	228±
11	1967	490	0-287',16" 287-490',12"	75	25	135±
12	1972	440	16	100	40	73
13	1974	482	0-243',16" 243-482',12-3/4"	72	55	53
14	1975	436	0-228',16" 228-436',12"	87	60	196
15	1977	543	16	?	100	240±
16	1977	490	16	99	102	
17	1977	513	16	90	60	
18	1977	634	16	75	70	
19	1980	470	16	100	80	
20	1980	490	16	100	60	
21	1981	600	16	107	70	

(1) Data is for March 1984.
(2) Data is inconsistant. Values with ± are average of available data.

10.0 WATER

SOURCES

1. Water System Master Plan Dewante and Stowell, September 1985

2. Yolo County Water Plan, 1984

3. Progress Report, Sacramento and Redding Basins, Ground Water Study In conjunction with U.S. Geological Survey, State of California, December 1987

4. Final EIR, Highway 113 Reallignment, September 1988

Vegetation and Wildlife

11. VEGETATION AND WILDLIFE

The following is a synthesis of plant and animal species information contained in the Wastewater Facility Master Plan EIR (Oct. 1985), and the Storm Drainage Master Plan (1987), prepared for the City.

Prehistorically the lower Sacramento Valley, including the Woodland/Davis vicinity supported a native vegetation complex of riparian forests and tule marshlands. In years of above normal rainfall or rapid spring snow melts the Sacramento River and Cache Creek would overflow their banks and create broad marshlands which had standing water well into the summer season. Heavy alkaline soils developed in these marshland areas. Areas where water movement was more rapid or where coarser sediments were deposited, developed siltier soils and vast riparian forest bottom lands.

The riparian bottom lands and their siltier soils supported a well developed complex forest/woodland vegetation. These riparian forests were medium tall to tall, broad-leaved deciduous forests with an assortment of lianas. Common species included Acer negundo var. californicum, Alnus rhombifolia, Baccharis viminea, Cephalanthus occidentalis var. californicus, Clematis ligusticifolia, Platanus raceemosa, Ouercus lobata, Rubus vitifolius, Salix gooddingii var. variabilis, Salix laevigata, Urtica holosericea, and Vitus california. In addition to these woody dominants a broad variety of herbs were common to the riparian forest understory.

The tule marshlands appeared structurally as tall, dense, graminoid communities which were occasionally interrupted by open water. Common component species included Scirpus acutus, Typha latifolia, Carex senta, Eleocharis palustris, Juncus balticus, Juncus effusus var. pacificus, Scirpus americanus, Scirpus californicus, Scirpus olneyi, Scirpus robustus, Scirpus validus and Typha domingensis. The areas of open water among the tules were subject to periodic drying. These low lying "mud flats" were colonized by various species common to the salt marshes of the lower delta area. Among the most conspicuous of the species are Distichlis spicata var. stolonifera, Frankenia grandifolia, and Salicornia virginica.

Historically, the riparian forest and tule marshlands supported a broad variety of wildlife. Vast herds of Tule elk, Blacktail deer, and Pronghorn antelope ranged throughout the central valley grasslands and forests. The vast wetlands of the tule marshlands formed the basic habitat for hundreds of thousands of migratory waterfowl which used the Pacific Flyway route. Conversions of these forests and wetlands to agricultural and urban uses has drastically reduced available wildlife habitats. The vast herds of grazing animals have all but disappeared from the lower Sacramento Valley. Although significant marshlands still exist in the lower Delta areas, the lower Sacramento Valley has seen a dramatic decrease in available wetland habitats.

The California Natural Diversity Data Base shows both specific and non-specific occurrences for two sensitive species, Cordylanthus palmatus and Buteo swainsoni, in the general project area. A significant consideration in the project survey was given to the identification of potential suitable habitat for these sensitive species.

Cordylanthus plamatus (Ferris) macbr. is a low, loosely much-branched annual. The plants are often pilose or pubescent with some hair gland-tipped. . Leaves are 1-2 cm, oblong, and mostly incised. The bracts subtending the flowers are ovate with three often ascending lobes. The calyx is 12-15 mm. long with oblong lanceolate, entire, or bidenlate with the teeth approximately 1 mm. long. The corolla is 12-16 mm. long with a finely reflexed-pubescent galea with a wide thin glabrous margin.

In general, Cordylanthus palmatus is an inconspicuous herb which occurs occasionally on overflow lands with heavy alkaline soils from Colusa County to Madera County. Presently C. Palmatus is listed as an endangered species by the U.S. Fish and Wildlife Service, and the California State Department of Fish and Game. Cordylanthus palmatus' status is largely the result of major conversions of suitable habitats to either agricultural or urban land uses.

A non-specific location or occurrence for Cordylanthus palmatus is mapped in the vicinity of the sewage treatment facility located in the southeast corner of Section 22 of T10N R2E, M.D.B. & M. by the California Natural Diversity Data Base. Plants at this general location were last observed in 1952 and no plants were observed in 1974 by Peter Sands. (Per communication with the California Natural Diversity Data Base.)

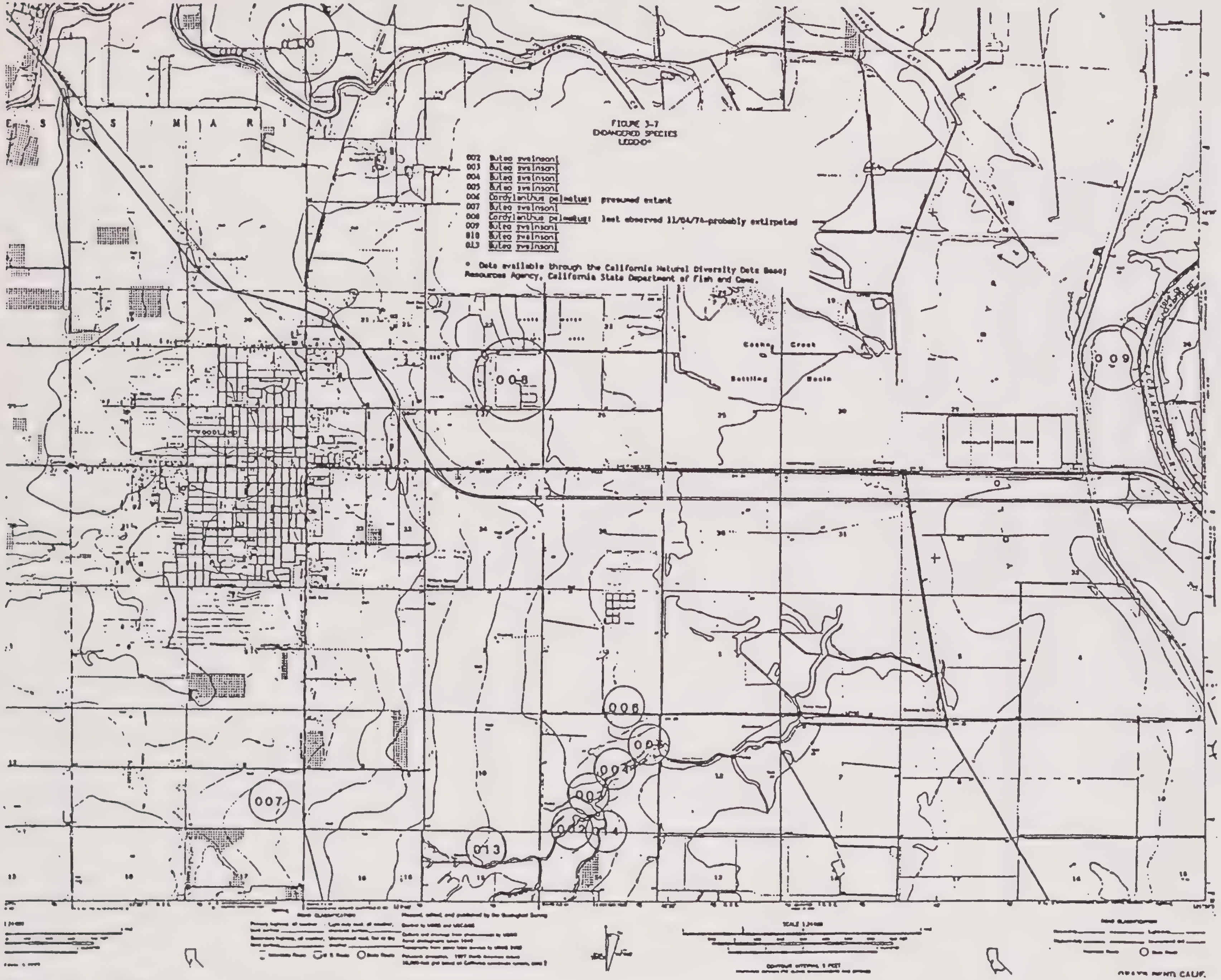
Several specific locations or occurrences are known from an area approximately 1 mile south of the City of Woodland's wastewater treatment facility in Section 2 of T9N R2E M.D.B. & M. Plants were observed reportedly at this location during 1981 and 1982. Approximately 200 individuals in the area have been reported to occur between the southern limit of the Woodland sewage treatment facilities in Section 2 of T9N, R2E and the north bank of Willow Slough. Figure 11-1 submitted by the California Native Plan Society illustrates the local known populations of C. palmatus.

Buteo swainsoni is a large stocky hawk with adult wingspans of 4 to 4 3/4 feet. In general B. swainsoni is proportioned like the ubiquitous Redtailed Hawk except the wings appear more pointed and are raised somewhat above horizontal when gliding, more typical of the gliding posture of Marsh Hawks. Although several color forms or variations may exist, typical adult Swainsonis Hawks have a dark breast band and dark primary flight feathers which contrast with their unmarked buffy wing linings. The tail is most often gray above, frequently shading to a light patch at the base.

Buteo swainsoni is migratory, spending its winters in South America and breeding and nesting in most of Western North America. The nests are typically found in areas where sparse tree stands are surrounded by broad, often arid plains.

Several specific locations for Buteo swainsoni are mapped in the general vicinity of the proposed project. Most of these specific sightings are located near nesting or roosting sites in groves of Oaks and Cottonwoods along Willow Slough, the Sacramento River, and at the southern tip of Grays Bend. Most of these specific locations were observed during the late spring and early summer of 1984 with nest sites noted.

Buteo swainsoni is presently listed by the U.S. Fish and Wildlife Service on Candidate List 2 for endangered status. The California State Department of Fish and Game officially lists *B. swainsoni* as threatened. The sensitive status of *B. swainsoni* is principally due to a loss of foraging and nesting habitat and shooting of individuals by farmers, ranchers, and "sportsmen" (See Fig. 11-1 for locations).



QUAD CONSULTANTS

TITLE

ENDANGERED SPECIES

FIGURE

11-1

FIGURE 11-1

11.0 VEGETATION AND WILDLIFE

SOURCES

1. Wastewater Facilities Master Plan EIR (Oct 1985)
City of Woodland, prepared by Quad Consultants

2. Storm Drainage Masterplan (Dec 1987)
City of Woodland, prepared by Quad Consultants

3. Final EIR, Highway 113 re-alignment (Sept 1985) C.H. #83091047

Fisheries

12. FISHERIES

FINDINGS

- Woodland's Fisheries are located on the lower Cache Creek, adjacent canals, and the nearby east and west drains of the Yolo-Sacramento River Bypass.

- Warm-water fish species can be found in local waters. They include:

GAME FISH	NON-GAME FISH
1. Large Mouth Bass	1. Golden Shiner
2. Channel Catfish	2. Thread-fin Shad
3. White Catfish	3. Sucker
4. Brown and Bull Catfish	
5. Sunfish	
a. Crappie	
b. Green Sunfish	
c. Bluegill	

- Fish population studies in the Woodland area fisheries have not been conducted.

12.0 FISHERIES

SOURCE

1. Fred Meyer, California Fish and Game, 12-4-87

Noise

13. NOISE

I. DESCRIPTION OF NOISE

Noise is often defined simply as unwanted sound, and thus is a subjective reaction to characteristics of a physical phenomenon. Researchers for many years have grappled with the problem of translating objective meaurements of sound into directly correlatable measures of public reaction to noise. The descriptors of community noise in current use are the results of these efforts, and represent simplified, practical measurement tools to gauge community response. Before elaborating on these descriptors, it is useful to first discuss some fundamental concepts of sound.

Sound is defined as any pressure variation in air that the human ear can detect. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and hence are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second, now called Hertz (Hz) by international agreement.

The speed of sound in air is approximately 770 miles per hour, or 1,130 feet/second. Knowing the speed and frequency of sound, one may calculate its wavelength, the physical distance in air from one compression of the atmosphere to the next. An understanding of wavelength is useful in evaluating the effectiveness of physical noise control devices such as mufflers or barriers, which depend upon either absorbing or blocking sound waves to reduce sound levels.

To measure sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold as a point of reference, defined as 0 dB. Other sound pressures are then compared to the reference pressure, and the logarithm is taken to keep the numbers in a practical range.

Use of the decibel scale allows a million-fold increase in pressure to be expressed as 120 dB. Another useful aspect of the decibel scale is that changes in levels (dB) are uniform throughout the scale, corresponding closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, in the range of usual environmental noise 1 levels, perception of loudness is relatively predictable, and can be approximated by weighting the frequency response of a sound level measurement device (called a sound level meter) by means of the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

Figure 13-5 illustrates typical A-weighted noise levels due to recognizable sources, and expected public reaction.

It is common to describe community noise in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (Leq), which is the sound level corresponding to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The Leq is the foundation of the composite noise descriptors such as Ldn and CNEL, and shows very good correlation with community response to noise.

Two composite noise descriptors are in common use today: Ldn and CNEL. The Ldn (day-night average level) is based upon the average hourly Leq over a 24 hour day, with a +10 decibel weighting applied to nighttime (10:00 p.m. to 7:00 a.m.) Leq's. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were subjectively twice as loud as daytime exposures. The CNEL (Community Noise Equivalent Level), like Ldn, is based upon the weighted average hourly Leq over a 24-hour day, except that an additional +5 decibel penalty is applied to evening (7:00 p.m. to 10:00 p.m.) hourly Leq's. The CNEL was developed for the California Airport Noise Regulations, and is applied specifically to airport/aircraft noise assessment. The Ldn descriptor is a simplification of the CNEL concept, but the two will usually agree, for a given situation, with 1 dB. Like the Leq, these descriptors are also averages and tend to disguise variations in the noise environment. Because they presume increased evening or nighttime sensitivity, they are best applied as criteria for land uses where nighttime noise exposures are critical to the acceptability of the noise environment, such as residential developments.

Noise in the community has often been cited as being a health problem, not in terms of actual physiological damage such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from the interference with human activities such as sleep, speech, recreation, and tasks demanding concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability of the environment for people decreases. This decrease in acceptability and the threat to public well-being is the basis for land use planning policies directed towards the prevention of exposure to excessive community noise levels.

To control noise from fixed sources which have come into existence by processes other than zoning or land use planning, many jurisdictions have adopted community noise control ordinances. Such ordinances are intended to abate noise nuisances and to control noise from existing sources. They may also be used as planning tools if applied to the potential creation of a nuisance, or to potential encroachment of sensitive uses upon noise-producing facilities. Community noise control ordinances are generally designed to resolve noise problems on a short-term basis (usually by means of hourly noise nuisances and to control noise from existing sources. They may also be used as planning

tools if applied to the potential creation of a nuisance, or to potential encroachment of sensitive uses upon noise-producing facilities. Community noise control ordinances are generally designed to resolve noise problems on a short-term basis (usually by means of hourly noise level criteria), rather than on the basis of 24-hour or annual cumulative noise exposures.

In addition to the A-weighted noise level, other factors should be considered in establishing criteria for noise sensitive land uses. For example, sounds with noticeable tonal content such as whistles, horns, or droning or high-pitched sounds may be more annoying than the A-weighted sound level alone will suggest. Many noise standards apply a penalty, or correction, of 5 dBA to such sounds. The effects of unusual tonal content will generally be more of a concern at nighttime, when residents may notice the sound in contrast to background noise.

Because many rural residential areas experience very low noise levels, residents may express concern about the loss of "peace and quiet" due to the introduction of a sound which was not audible previously. In very quiet environments, the introduction of virtually any change in local activities will cause an increase in noise levels. A change in noise level and the loss of "peace and quiet" is the inevitable result of land use or activity changes in such areas. Audibility of a new noise source and/or increases in noise levels within recognized acceptable limits are not usually considered to be significant noise impacts, but these concerns should be addressed and considered in the planning and environmental review processes.

II. SETTING AND ASSUMPTIONS

Based on discussions with the City of Woodland staff regarding potential major noise sources, it was determined that there are several potentially significant primary sources of community noise within Woodland. These sources include traffic on major roadways and highways, railroad operations, and industrial activities.

Analytical noise modeling techniques and noise measurements were used to develop generalized Ldn noise contours for the major roadways, railroads and industrial noise sources in the City of Woodland for existing (1987) and future (2007) conditions.

Analytical noise modeling techniques make use of source-specific data including average levels of activity, hours of operation, seasonal fluctuations, and average levels of noise from source operations. Analytical methods have been developed for a number of environmental noise sources including roadways, railroad line operations, railroad yard operations, industrial plants. Such methods will produce reliable results as long as data inputs and assumptions are valid for the sources being studied. The analytical methods used in this report closely follow recommendations made by ONC, and were supplemented where appropriate by field-measured noise level data to account for local conditions. It should be noted that the noise exposure contours presented in this report are based upon annual average conditions, and

are not intended to be site-specific where local topography, vegetation or intervening structures may significantly affect noise exposure at a particular location.

III. NOISE SURVEY

A community noise survey was conducted to describe existing noise levels in noise-sensitive areas within the City of Woodland so that noise level performance standards could be developed to maintain an acceptable noise environment.

Roads & Highways

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to develop Ldn contours for I-5 and major roadways in Woodland. The FHWA Model is the analytical method presently favored for traffic noise prediction by most state and local agencies, including Caltrans. The FHWA Model is based upon reference energy emission levls for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site. The FHWA model was developed to predict hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict Ldn values it is necessary to determine the hourly distribution of traffic for a typical 24-hour day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Traffic data representing annual average traffic volumes for existing and future conditions was obtained from Cal Trans and the City of Woodland and are summarized in the General Plan data base. The day-night distribution of traffic and the truck mix was based upon Cal Trans file data and BBA estimates. Using the General Plan data and the FHWA methodology, traffic noise levels as defined by LDN were calculated for existing and projected future traffic volumes. Distances from the center of the roadway to the 60 dB Ldn contour are summarized in Table 13-1.

It should be noted that since calculations did not take into consideration shielding caused by local buildings or topographical features, the distances reported in Table I should be considered as worst-case estimates of noise exposure along roadways in the community. Noise contour maps were prepared from the data contained in Table 13-1 to allow implementation of this noise element.

TABLE 13-1
NOISE CONTOUR DATA
DISTANCE (FEET) FROM CENTER OF ROADWAY
TO Ldn CONTOURS

Segment Numbers	Description	Current 60 dB
Kentucky Avenue:		
1	County Road 98 to Cottonwood St.	105
2	Cottonwood St. to Nevada St.	130
3	Nevada St. to West St.	158
4	West St. to College St.	163
5	College St. to Palm Ave.	180
6	Palm Ave. to East St.	153
7	East St. to Harter Ave.	97
8	Harter Ave. to I-5	86
9	I-5 to County Road 101	74
Beamer Street:		
10	County Road 98 to Kern Ave.	24
11	Kern Ave. to Ashley Ave.	33
12	Ashley Ave. to Greengate School	39
13	Greengate School to Cottonwood St.	43
14	Cottonwood St. to California St.	50
15	California St. to West St.	63
16	West St. to Walnut St.	60
17	Walnut St. to College St.	57
18	College St. to Palm Ave.	53
19	Palm Ave. to East St.	52
20	East St. to I-5	46
21	I-5 to County Road 101	30
Court Street:		
22	California St. to College St.	82
23	College St. to East St.	77
Main Street:		
24	County Road 98 to Ashley Ave.	77
25	Ashley Ave. to Cottonwood St.	74
26	Cottonwood St. to California St.	103
27	California St. to College St.	111
28	College St. to Fourth St.	102
29	Fourth St. to East St.	100
30	East St. to Thomas St.	105
31	Thomas St. to Hwy 113	96
32	Hwy 113 to County Road 101	89

Cross Street:

33	Cottonwood St. to California St.	40
34	California St. to West St.	38
35	West St. to Cleveland St.	32
36	Cleveland St. to Elm St.	39
37	Elm St. to College St.	41
38	College St. to Third St.	39
39	Third St. to Fourth St.	37
40	Fourth St. to Sixth St.	34
41	Sixth St. to East St.	28

Gibson Road:

42	County Road 98 to Ashley Ave.	42
43	Ashley Ave. to Cottonwood St.	53
44	Cottonwood St. to West St.	72
45	West St. to Spruce Dr.	79
46	Spruce Dr. to College St.	89
47	College St. to Norden Way	89
48	Norden Way to East St.	87
49	East St. to County Road 101	57

Ashley Avenue:

50	Kentucky Ave. to Beamer St.	17
51	Beamer St. to Court St.	24
52	Court St. to Main St.	30

Cottonwood Street:

53	Kentucky Ave. to Woodland Ave.	35
54	Woodland Ave. to Beamer St.	42
55	Beamer St. to Court St.	57
56	Court St. to Main St.	79
57	Main St. to Lincoln Ave.	91
58	Lincoln Ave. to Cross St.	90
59	Cross St. to Southwood Dr.	79
60	Southwood Dr. to Boxwood Rd.	74
61	Boxwood Rd. to Gibson Rd.	63

West Street:

62	Kentucky Ave. to Woodland Ave.	45
63	Woodland Ave. to Beamer St.	57
64	Beamer St. to Main St.	70
65	Main St. to Lincoln Ave.	79
66	Lincoln Ave. to Cross St.	71
67	Cross St. to Southwood Dr.	69
68	Southwood Dr. to Gibson Rd.	63

College Street:

69	Kentucky Ave. to Woodland Ave.	27
70	Woodland Ave. to Beamer St.	34
71	Beamer St. to Clover St.	36
72	Clover St. to Court St.	47
73	Court St. to Main St.	50
74	Main St. to Lincoln Ave.	53
75	Lincoln Ave. to Oak Ave.	54
76	Oak Ave. to Cross St.	53
77	Cross St. to Bartlett Ave.	55
78	Bartlett Ave. to Gibson Road	57

East Street:

79	I-5 to Beamer St.	178
80	Beamer St. to Main St.	215
81	Main St. to Gum Ave.	294
82	Gum Ave. to Gibson Rd.	238
83	Gibson Rd. to Out of Town	198

County Road 101:

84	Kentucky Ave. to Beamer St.	57
85	Beamer St. to Main St.	60
86	Main St. to Gum Ave.	54

I-5:

87	East St. to Main St.	532
88	Main St. to County Road 102	701

Railroads

Railroad operations in Woodland include Southern Pacific Transportation Company (SPTCo) local and through freight activity on the main line adjacent to East Street and switching and light freight activity by Union Pacific on the Sacramento Northern trackage.

According to the SPTCo, there are currently approximately four northbound and one southbound through freights per 24-hour day, plus up to two switchers in use during day time hours. The speed of through freights is about 25 mph, while switching operations are performed at lower speeds. Cumulative noise exposure as defined by the day-night average level (Ldn) is calculated to be 70.7 dB at 100 feet from the track centerline. There are no planned changes in operations for this line.

The Sacramento Northern line, operated by Union Pacific, follows East Main to East Street with spurs extending into the industrial area north of East Main Street. Current operations involve the use of one switch engine two times per week, usually after 9 p.m. Average speed was reported to be about 10 mph. The calculated worst-case daily noise exposure is 61.3 dB at 100 feet from the track centerline. No operational change is anticipated for this line.

Railroad operations in Woodland generate significant noise levels in the proximity of the main line along East Street. Noise mitigation measures should be employed when development of noise-sensitive uses adjacent to these tracks is being considered. The use of horns and locomotive noise are the major contributors to the railroad noise environment in Woodland.

Industrial Facilities

The production of noise is an inherent part of many industrial processes, even when the best available noise control technology is applied. Noise production within an industrial facility is controlled indirectly by Federal and State Employee Health and Safety Regulations (OSHA and Cal-OSHA), but exterior noise emissions from industrial operations have the potential to exceed locally acceptable standards at noise sensitive land uses.

Industrial noise control issues focus upon two objectives: to prevent the introduction of new noise-producing uses in a noise sensitive area, and to prevent encroachment of noise sensitive uses upon existing industrial facilities. The first objective can be achieved by applying performance standards to proposed new industrial uses. The second objective can be met by requiring that new noise sensitive uses in proximity to existing industrial facilities include mitigation measures to ensure compliance with the same performance standards.

Representative Industrial Noise Sources

The following descriptions of existing industrial noise sources in Woodland are intended to be representative of the relative noise impacts of such uses, and to identify specific noise sources which should be considered in the review of development proposals in their environs.

Adams Grain Dryer: 1020 East Street

Operations at the Adams Grain facility include drying, cleaning and storing of grain and feeds. Current working hours are 8:00 a.m. to 5:00 p.m., but shifts have been extended during peak harvest times. Noise sources at this facility include drying equipment, a roller mill, conveyers and fans. Heavy trucks moving grain to and from the plant contribute to the noise environment as well. Figure 13-6 shows the approximate location of 50 dBA L50 contour for normal operations, based upon noise measurements made on October 12, 1987.

Reference: Lori Brooks, October 30, 1987.

Contadina Foods: 1376 Lemen Avenue

Contadina Foods operates a food processing and packaging plant. The facility operates on a 24-hour basis from mid-June thru September with reprocessing and limited operation the remainder of the year. Noise producing activities at the plant include canners, conveyers, turbines and additional packaging equipment. Noise measurements of the Contadina plant operation were not performed due to production being completed prior to the noise survey. An acoustical analysis of the Contadina plant in full operation should be required prior to the development of noise sensitive uses near the facility to ensure compliance with the noise element performance standards.

Reference: Mr. Chris Roberts, November 24, 1987

Pacific International Rice Mill, Inc (PIRMI): 845 Kentucky Avenue

Operations at the PIRMI plant include the drying, packaging and milling of rice. Typical hours of operation are 8 a.m. to 4 p.m. Monday thru Friday. Plant operations increase to 24 hours per day with seasonal demands from mid-September thru November. Noise sources at this facility include grain elevators, dryers and conveyers. Figure 13-6 shows the approximate location of the 50 dBA L50 contour for typical plant operations.

Reference: Mr. Jerry Brown, November 31, 1987

Other Noise Sources

In addition to industrial and transportation related noise sources, ambient noise levels in Woodland are affected periodically by recreational gatherings and emergencies. Sporting events at Woodland High School including football games and early morning swim meets as well as ball games at Clark Field, Douglass Jr. High and local parks, generate elevated noise levels due to whistles and cheering. Activities at the fairgrounds involving a public address system and/or amplified music may also present a possible annoyance to nearby neighbors.

Emergency helicopter use of the front lawn and parking lot at the Woodland Memorial Hospital may result in undesirable noise levels, but occurs infrequently. These flights may result in high single event noise levels, but corresponding Ldn values are not significant due to the relatively short duration of these activities.

IV. COMMUNITY NOISE SURVEY

As required by the ONC Guidelines, a community noise survey was conducted to document noise exposure in areas of the community containing noise sensitive land uses. The following noise sensitive land uses were identified within the City of Woodland:

1. All residential uses.
2. Schools.
3. Long-term care medical facilities such as hospitals and nursing homes.

Noise monitoring sites were selected to be representative of typical conditions in areas of the community where such uses are located. Short-term noise monitoring was conducted during three periods of the day and night on October 13, 1987, so that reasonable estimates of Ldn could be prepared. One long-term noise monitoring site was used to establish day-night statistical trends during the same period. The data collected included the Leq and other statistical descriptors. Noise monitoring sites, measured noise levels and estimated Ldn values of each site are summarized in Table 13-2; monitoring sites are shown by Figure 13-6.

Community noise monitoring equipment consisted of a Larson-Davis Laboratories (LDL) Model 800B precision integrating sound level meter fitted with a one-half inch microphone, a LDL Model 700 environmental noise analyzer, and a Metrosonics dB 604 environmental noise analyzer. The measurement systems were calibrated in the field prior to use with acoustical calibrators, and comply with all pertinent requirements of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The community noise survey results indicate that typical noise levels in noise sensitive areas of Woodland are in the range of 50 dB to 60dB Ldn. Noise from traffic on roadways is the controlling factor for background noise levels in the City. In general, the areas of Woodland which contain noise sensitive uses are relatively quiet except along major roadways and adjacent to industrial operations.

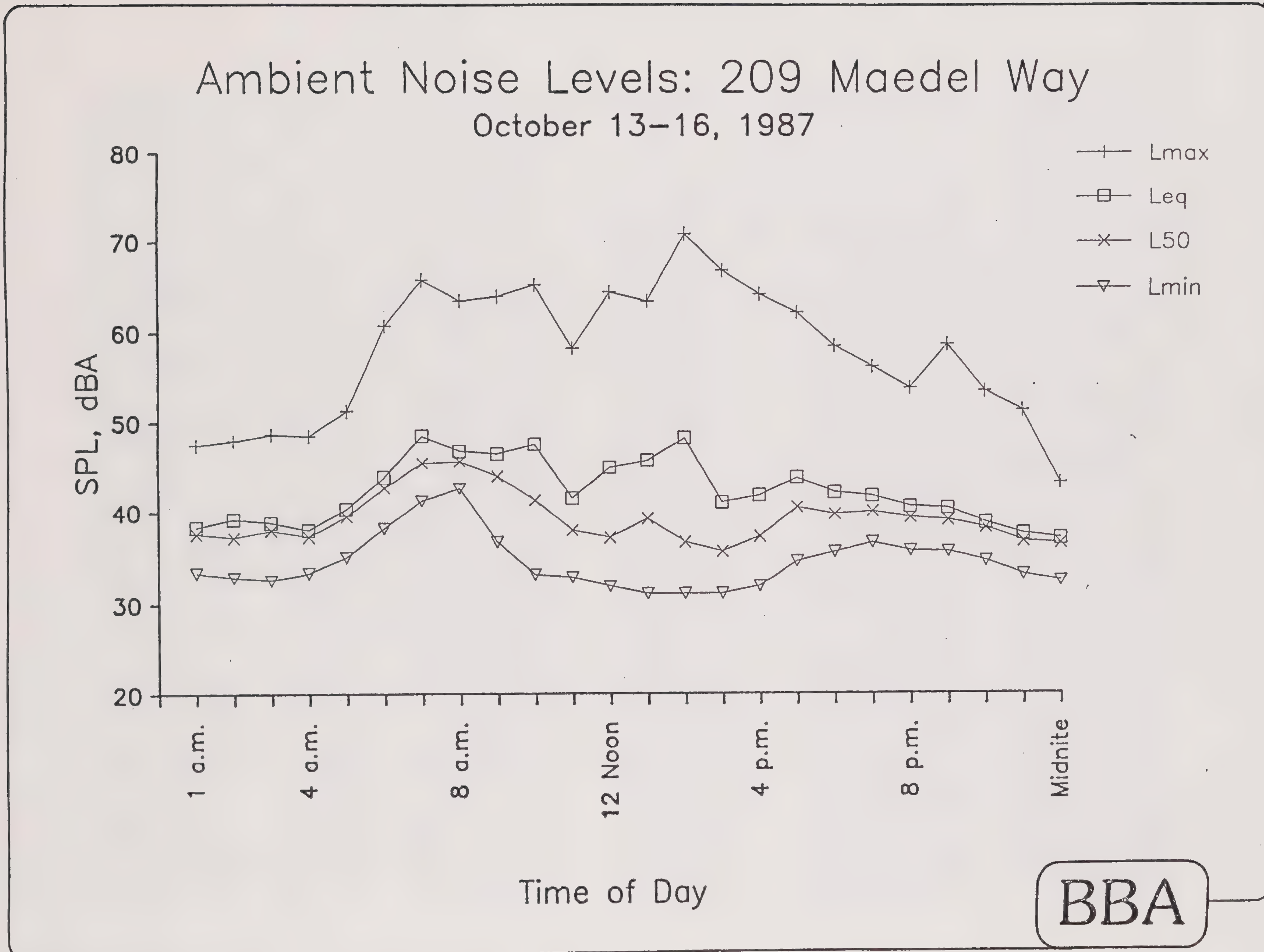
TABLE 13-2

SUMMARY OF MEASURED NOISE LEVELS AND ESTIMATED DAY-NIGHT AVERAGE LEVELS (Ldn) IN AREAS CONTAINING NOISE SENSITIVE LAND USES

		Level, dBA			
Site No.	Description	Ld (1)	Ld (2)	Ln	Est. Ldn
1	Campbell Park	56.2	53.4	45.3	55.1
2	Everman Park	54.5	49.4	44.7	53.5
3	Woodside Park	51.7	55.4	51.3	58.2
4	John Ferns Park	53.7	55.0	42.4	53.8
5	Sierra St. and Schuerle	53.5	58.0	46.2	56.3
6	Mariposa and Schuler Ranch	50.4	60.1	42.3	56.2
7	Beamer Park	47.7	47.4	45.5	52.3
8	Court House - Third & North	54.2	55.4	47.5	56.0
9*	209 Maedell Way	44.3	—	41.9	48.8

* = Long-term monitoring site.
Ld = Leq during daytime hours (7:00 a.m. to 10:00 p.m.).
Ln - Leq during nighttime hours (10:00 p.m. to 7:00 a.m.).

Figure 13-1 illustrates ambient noise levels at the long-term monitoring site over typical 24-hour weekdays. The noise level data collected at this backyard location illustrates the typical trend of elevated daytime noise levels as compared to nighttime noise levels.


Ambient Noise Levels: 209 Maedel Way
October 13–16, 1987
Lmax
Leq
L50
Lmin
SPL, dBA
80
70
60
50
40
30
20
1 a.m.
4 a.m.
8 a.m.
12 Noon
4 p.m.
8 p.m.
Midnite
Time of Day
BBA

Techniques For Noise Control

Any noise problem may be considered as being composed of three basic elements: the noise source, a transmission path, and a receiver. Local control of noise sources is practical only with respect to fixed sources (e.g., industrial facilities, outdoor activities, etc.), as control of vehicular sources is generally preempted by federal or state law. Control of fixed noise sources is usually best obtained by enforcement of a local noise control ordinance. The emphasis of noise control in land use planning is therefore placed upon acoustical treatment of the transmission path and the receiving structures.

The appropriate acoustical treatment for a given project should consider the nature of the noise source and the sensitivity of the receiver. The problem should be defined in terms of appropriate criteria (Ldn, Leq, or Lmax), the location of the sensitive receiver (inside or outside), and when the problem occurs (daytime or nighttime). Noise control techniques should then be selected to provide an acceptable noise environment for the receiving property while remaining consistent with local aesthetic standards and practical structural and economic limits. Fundamental noise control techniques include the following:

Use of Setbacks

Noise exposure may be reduced by increasing the distance between the noise source and receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, storage yards, etc. The available noise attenuation from this technique is limited by the characteristics of the noise source, but is generally 4 to 6 dBA per doubling of distance from the source.

Use of Barriers

Shielding by barriers can be obtained by placing walls, berms or other structures, such as buildings, between the noise source and the receiver. The effectiveness of a barrier depends upon blocking line-of-sight between the source and receiver, and is improved with increasing the distance the sound must travel to pass over the barrier as compared to a straight line from source to receiver. The difference between the distance over a barrier and a straight line between source and receiver is called the "pathlength difference," and is the basis for calculating barrier noise reduction.

Barrier effectiveness depends upon the relative heights of the source, barrier and receiver. In general, barriers are most effective when placed close to either the receiver or the source. An intermediate barrier location yields a smaller pathlength difference for a given increase in barrier height than does a location closer to either source or receiver.

For maximum effectiveness, barriers must be continuous and relatively airtight along their length and height. To ensure that sound transmission through the barrier is insignificant, barrier mass should be about 4 lbs./square foot, although a lesser mass may be acceptable if the barrier material provides sufficient transmission loss in the frequency range of concern. Satisfaction of the above criteria requires substantial and well-fitted barrier materials, placed to intercept line-of-sight to all significant noise sources. Earth, in

the form of berms or the face of a depressed area, is also an effective barrier material.

The attenuation provided by a barrier depends upon the frequency content of the source. Generally, higher frequencies are attenuated (reduced) more readily than lower frequencies. This results because a given barrier height is relatively large compared to the shorter wavelengths of high frequency sounds, while relatively small compared to the longer wavelengths of the frequency sounds. The effective center frequency for traffic noise is usually considered to be 550 Hz. Railroad engines, cars and horns emit noise with differing frequency content, so the effectiveness of a barrier will vary for each of these sources.

Frequency analyses are necessary to properly calculate barrier effectiveness of noise from sources other than highway traffic.

There are practical limits to the noise reduction provided by barriers. For highway traffic noise, a 5 to 10 dBA noise reduction may often be reasonably attained. A 15 dBA noise reduction is sometimes possible, but a 20 dBA noise reduction is extremely difficult to achieve. Barriers usually are provided in the form of walls, berms, or berm/wall combinations. The use of an earth berm in lieu of a solid wall will provide up to 3 dBA additional attenuation over that attained by a solid wall alone, due to the absorption provided by the earth. Berm/wall combinations offer slightly better acoustical performance than solid walls, and are often preferred for aesthetic reasons.

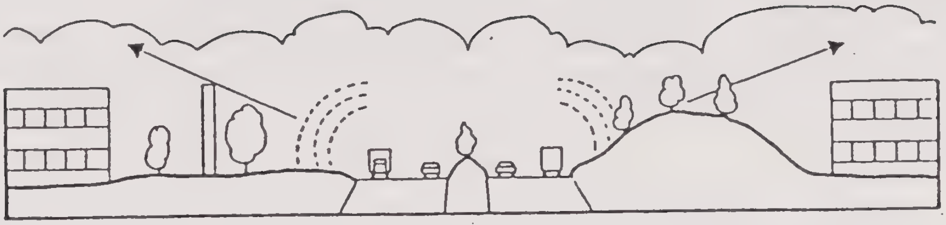
Another form of barrier is the use of a depressed noise source location, such as depressed loading areas in shopping centers or depressed roadways. The walls of the depression serve to break line-of-sight between the source and receiver, and will provide absorption if left in earth or vegetative cover.

Site Design

Buildings can be placed on a project site to shield other structures or areas, to remove them from noise-impacted areas, and to prevent an increase in noise level caused by reflections. The use of one building to shield another can significantly reduce overall project noise control costs, particularly if the shielding structure is insensitive to noise. As an example, carports or garages can be used to form or complement a barrier shielding adjacent dwellings or an outdoor activity area. Similarly, one residential unit can be placed to shield another so that noise reduction measures are needed for only the building closest to the noise source. Placement of outdoor activity areas within the shielded portion of a building complex, such as a central courtyard, can be an effective method of providing a quiet retreat in an otherwise noisy environment. Patios or balconies should be placed on the side of a building opposite the patios to help shield sensitive uses.

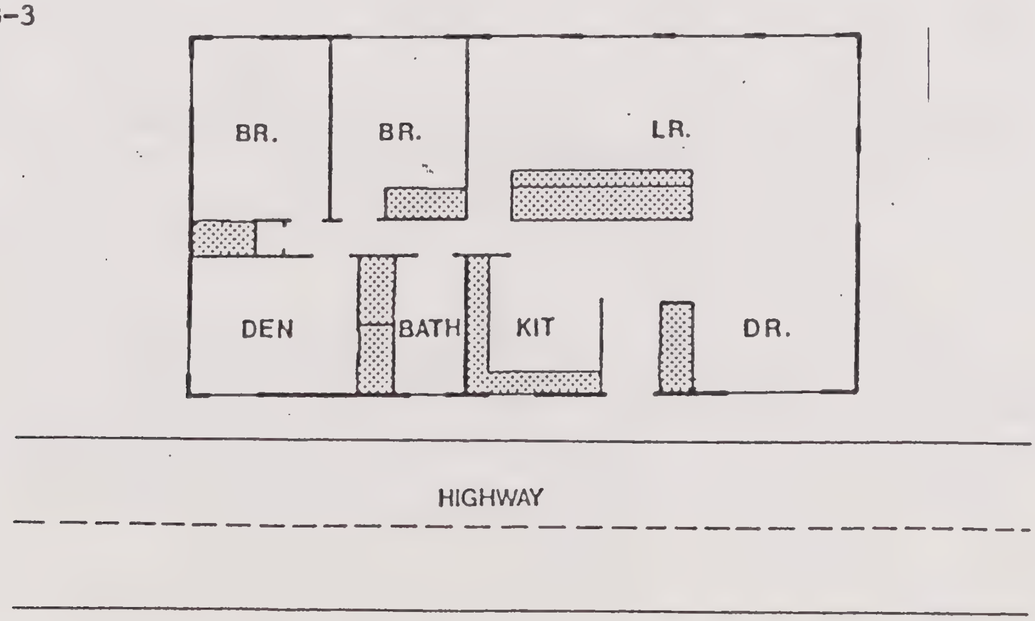
Where project design does not allow using buildings or other land uses to shield sensitive uses, noise control costs can be reduced by orienting buildings with the narrow end facing the noise source, reducing the total area of the building requiring acoustical treatment. Some examples of building orientation to reduce noise impacts are shown in Figure 13-4.

FIGURE 13-2



Another option in site design is the placement of relatively insensitive land uses, such as commercial or storage areas, between the noise source and a more sensitive portion of the project. Examples include development of a commercial strip along a busy arterial to block noise affecting a residential area, or providing recreational vehicle storage or travel trailer parking along the noise-impacted edge of a mobile home park. If existing topography or development adjacent to the project site provides some shielding, as in the case of an existing berm, knoll or building, sensitive structures or activity areas may be placed behind those features to reduce noise control costs. (See Figure 13-2.)

FIGURE 13-3



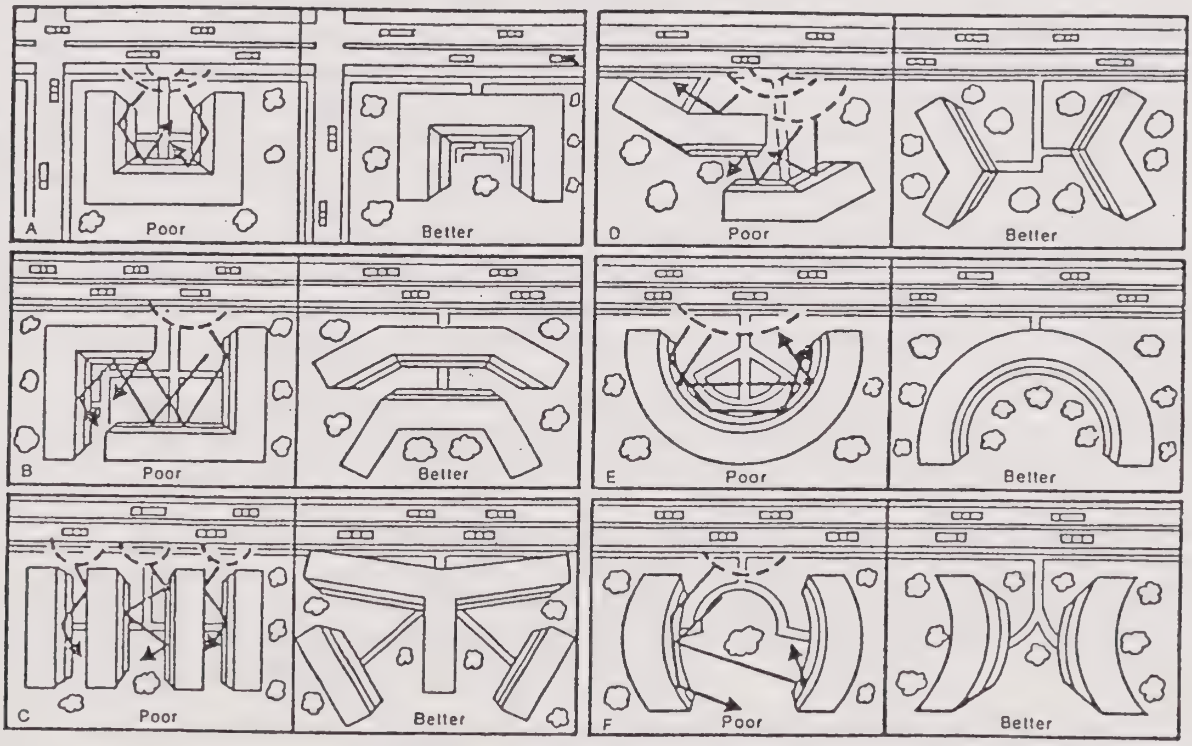
Site design should also guard against the creation of reflecting surfaces which may increase onsite noise levels. For example, two buildings placed at an angle facing a noise source may cause noise levels within that angle to increase by up to 3 dBA. The open end of "U"-shaped buildings should point away from noise sources for the same reason. Landscaping walls or noise barriers located within a development may inadvertently reflect noise back to a noise-sensitive area unless carefully located. Avoidance of these problems while attaining an aesthetic site design requires close coordination between local agencies, the project engineer and architect, and the noise consultant.

Another important aspect of site design is avoiding the creation of noise problems at adjacent noise-sensitive properties. For example, air conditioning units for multi-family developments should not be placed adjacent to living areas of adjoining single-family residences unless provided with adequate shielding. Swimming pools and outdoor activity areas such as "tot lots" should be located away from adjoining residences, and adequate shielding should be provided.

Unit Design

When structures have been located to provide maximum noise reduction by barriers or site design, noise reduction measures may still be required to achieve an acceptable interior noise environment. The cost of such measures may be reduced by placement of interior dwelling unit features. For example, bedrooms, living rooms, family rooms and other noise-sensitive portions of a dwelling can be located on the side of the unit farthest from the noise source, as shown by Figure 13-3.

FIGURE 13-4



Bathrooms, closets, stairwells and food preparation areas are relatively insensitive to exterior noise sources, and can be placed on the noisy side of a unit. When such techniques are employed, noise reduction requirements for the building facade can be significantly reduced, although the architect must take care to isolate the noise impacted areas by the use of partitions or doors.

Building Design

In some cases, external building facades can influence reflected noise levels affecting adjacent buildings. This is primarily a problem where high-rise buildings are proposed, and the effect is most evident in urban areas, where an "urban canyon" may be created. Bell-shaped or irregular building facades and attention to the orientation of the building can reduce this effect.

Noise Reduction by Building Facades

When interior noise levels are of concern in a noisy environment, noise reduction may be obtained through acoustical design of building facades. Standard residential construction practices provide 12-15 dBA noise reduction for building facades with open windows, and 20-25 dBA noise reduction when windows are closed. Thus a 20 dBA exterior-to-interior noise reduction can be obtained by the requirement that building design include adequate ventilation systems, allowing windows on a noise-impacted facade to remain closed under any weather condition.

Where greater noise reduction is required, acoustical treatment of the building facade is necessary. Where window exposures are critical, reduction of relative window area is the most effective control technique, followed by providing acoustical glazing (thicker glass or increased air space between panes) in low air infiltration rate frames, use of fixed (non-movable) acoustical glazing or the elimination of windows. Noise transmitted through walls can be reduced by increasing wall mass (using stucco or brick in lieu of wood siding), isolating wall members by the use of double-or staggered-stud walls, or mounting interior walls on resilient channels. Noise control for exterior doorways is provided by reducing door area, using solid-core doors, and by acoustically sealing door perimeters with suitable gaskets. Roof treatments may include the use of plywood sheathing under roofing materials.

Standard energy-conservation double-pane glazing with an 1/8" or 1/4" air-space is not considered acoustical glazing, as its sound transmission loss for some noise sources is actually less than that of single-pane glazing.

Whichever noise control techniques are employed, it is essential that attention be given to installation of weatherstripping and caulking of joints. Openings for attic or subfloor ventilation may also require acoustical treatment; tight-fitting fireplace dampers and glass doors may be needed in aircraft noise-impacted areas.

Design of acoustical treatment for building facades should be based upon analysis of the level and frequency content of the noise source. The transmission loss of each building component should be defined, and the composite noise reduction for the complete facade calculated, accounting for absorption in the receiving room. A one-third octave band analysis is a definitive method of calculating the A-weighted noise reduction of a facade. A common measure of transmission loss is the Sound Transmission Class (STC). STC ratings are not directly comparable to A-weighted noise reduction, and must be corrected for the spectral content of the noise source. Requirements for transmission loss analyses are outlined by Section 2-3501 of the California Administrative Code, Title 24.

Use of Vegetation

It is often supposed that trees and other vegetation can provide significant noise attenuation. However, approximately 100 feet of dense foliage (so that no visual path extends through the foliage) is required to achieve even a 5 dBA attenuation of traffic noise. Thus the use of vegetation as a noise barrier should not be considered a practical method of noise control unless large tracts of dense foliage are part of the existing landscape.

Vegetation can be used to acoustically "soften" intervening ground between a noise source and receiver, increasing ground absorption of sound and thus increasing the attenuation of sound with distance. Planting of trees and shrubs is also of aesthetic and psychological value, and may reduce adverse public reaction to a noise source by removing the source from view, even though noise levels will be largely unaffected. It should be noted, however, that trees planted on the top of a noise control berm can actually slightly degrade the acoustical performance of the barrier. This effect can occur when high frequency sounds are diffracted (bent) by foliage and directed downward over a barrier.

In summary, the effects of vegetation upon noise transmission are minor, and are primarily limited to increased absorption of high frequency sounds and to reducing adverse public reaction to the noise by providing aesthetic benefits.

Sound Absorbing Materials

Absorptive materials such as fiberglass, foam, cloth and acoustical tiles or panels, are used to reduce reflections or reverberation in closed spaces. Their use in exterior environmental noise control may reduce reflections between parallel noise barriers or other reflective surface. Maintenance of absorptive materials used outdoors is difficult, as most such materials are easily damaged by sunlight and moisture. Their application as an outdoor noise control tool is limited to special cases where the control of reflected noise is critical.

FIGURE 13-5

Examples of Noise Levels

Level, dBA	Activity	
140		
	Sonic booms	
130	Threshold of pain	
120	Threshold of discomfort	
	Amplified music	
110	Commercial jet takeoff at 200 feet	
100	Auto horn at 10 feet	
		Very loud
90	Noisy factory interior	
	Heavy truck at 50 feet	
80		
	New automobile at 50 feet	Loud
70	Stenographic room	
60	Normal conversation at 6 feet	
50	Office interior	Moderate
40	Soft radio music	
30	Residence interior	Faint
20	Whisper at 6 feet	
10		Very faint
	Human breathing	
0	Threshold of audibility	

BBA

FIGURE 13-6

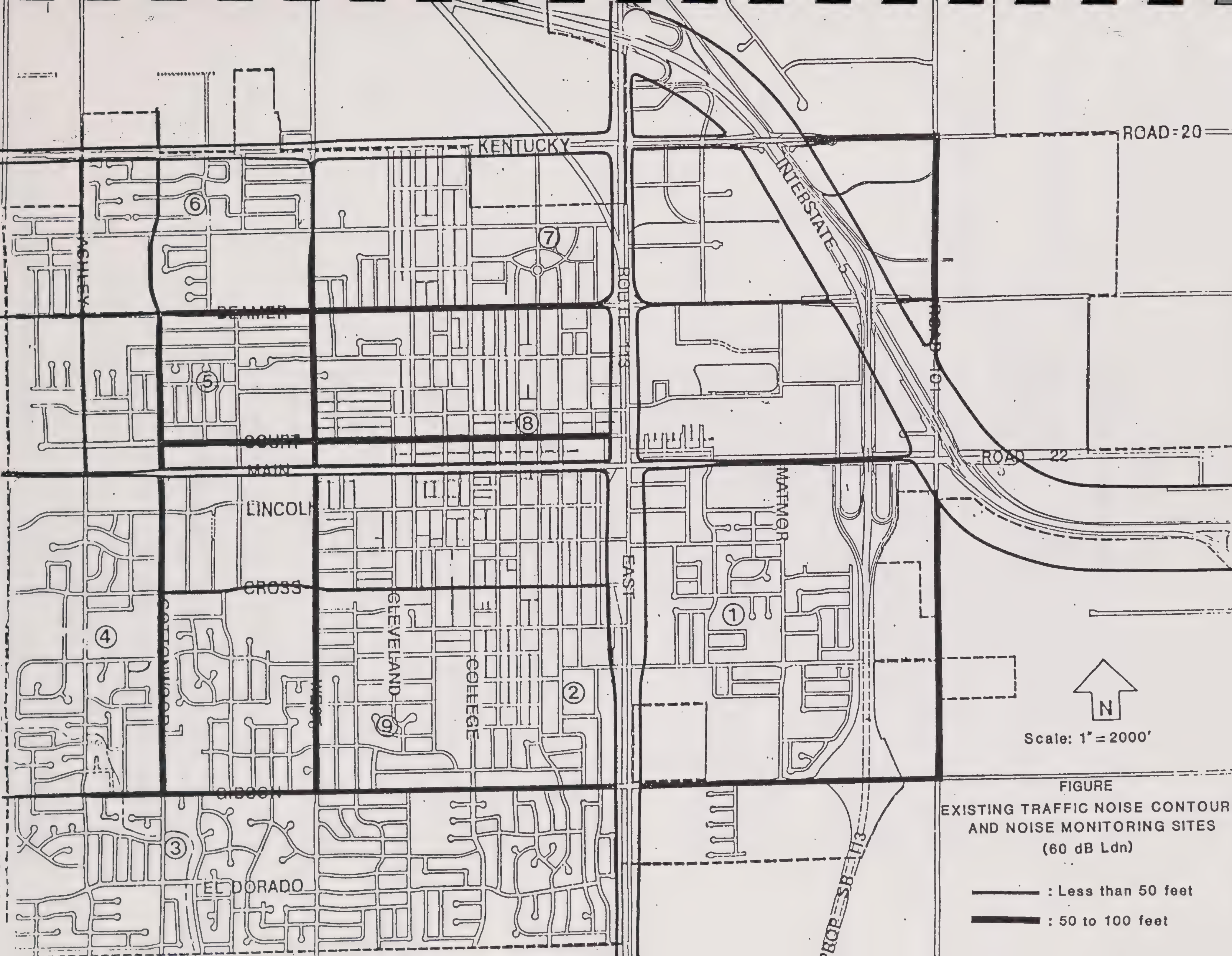


FIGURE
EXISTING TRAFFIC NOISE CONTOURS AND NOISE MONITORING SITES
(60 dB Ldn)

APPENDIX A

ACOUSTICAL TERMINOLOGY

Ambient Noise Level:	The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal existing level of environmental noise at a given location.
A-weighted Sound Level:	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise. Sound pressure levels weighted using this filter are labeled dBA.
CNEL:*	Community Noise Equivalent Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 4.77 decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.*
Decibel, dB:	A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Equivalent Energy Level, L_{eq}:	The sound level corresponding to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.
L_{dn}:*	Day-Night Average Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 10 decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.*
L_{max}:	The maximum A-weighted noise level recorded during a noise event.
$L_{(n)}$:	The sound pressure level in decibels which is exceeded n% of the time during a given sample period. For example, the L_{10} is the level exceeded 10% of the time. $L_{(n)}$ values are

statistical descriptors of variation in the noise environment. The L_{10}, L_{50} and L_{90} are commonly used for this purpose.

Noise Exposure Contours: Lines drawn about a noise source indicating constant energy levels of noise exposure. CNEL and L_{dn} contours are used most often to describe community exposure to noise.

Single Event Noise Exposure Level (SENEL): The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the level of the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on the reference pressure of 20 micropascals and a reference duration of one second. Also described as Sound Exposure Level (SEL).

*CNEL and L_{dn} represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the equivalent energy exposure for a shorter time period, typically one hour.

FHWA Model RD-77-108: Brown-Buntin Associates, Inc.
Project Number: 87-278
Year: 1987
50ft Site

INPUT DATA SUMMARY:

Segment	ADT	Day%	Eve%	Nite%	%MT	%HT	Speed	Distance
1	4200.0	83.0	0.0	17.0	3.0	7.2	35.0	50.0
2	5800.0	83.0	0.0	17.0	3.0	7.2	35.0	50.0
3	7700.0	83.0	0.0	17.0	3.0	7.2	35.0	50.0
4	8100.0	83.0	0.0	17.0	3.0	7.2	35.0	50.0
5	9400.0	83.0	0.0	17.0	3.0	7.2	35.0	50.0
6	7400.0	83.0	0.0	17.0	3.0	7.2	35.0	50.0
7	3700.0	83.0	0.0	17.0	3.0	7.2	35.0	50.0
8	3100.0	83.0	0.0	17.0	3.0	7.2	35.0	50.0
9	2500.0	83.0	0.0	17.0	3.0	7.2	35.0	50.0
10	1800.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
11	2800.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
12	3600.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
13	4200.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
14	5300.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
15	7450.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
16	7000.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
17	6500.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
18	5800.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
19	5600.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
20	4700.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
21	2500.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
22	11000.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
23	10000.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
24	10000.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
25	9500.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
26	15500.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
27	17500.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
28	15400.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
29	15000.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
30	16000.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
31	14000.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
32	12500.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
33	3800.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
34	3500.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
35	2700.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
36	3600.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
37	3900.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
38	3700.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
39	3300.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
40	3000.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
41	2200.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
42	4000.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
43	5700.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
44	9200.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0
45	10400.0	90.0	0.0	10.0	2.5	1.0	30.0	50.0

13.0 NOISE

SOURCES

1. Woodland General Plan - Noise Element - 1980

2. Brown-Buntin Associates, Inc. Project #87-278, 1987

3. "Action Plan" City of Woodland, 1979

4. Final EIR, Highway 113 Realignment, 9/85

Light and Glare

14. LIGHT AND GLARE

FINDINGS

- Woodland has between 60% and 70% cloudless days during the summer.

- Trees and shrubs are abundant throughout the city and help to alleviate sunlight reflection during cloudless days.

- Concentrated night time light generators are:

    1. Overhead street and security lights.

    2. Store and Parking lot lighting at the County Fair Mall on East Street and at Westgate Shopping Center on West Main Street.

    3. Baseball fields and the High School football field.

14.0 LIGHT AND GLARE

SOURCE

1. QUAD Field Observations, 12/1/87

Land Use

15. LAND USE

EXISTING LAND USE CHARACTERISTICS

I. THE GENERAL PLAN AREA

The land area defined as the Woodland Area for the Woodland Area General Plan encompasses approximately 56,000 acres. The area is bound on the north by the south bank of Cache Creek, on the east by the west levee of the Yolo Bypass, on the south by County Road 27 and on the west by a line which is the extension of County Road 93.

This area has been identified because the activities within this area are related to and centered upon the City of Woodland. Further, the area provides a definite buffer of agricultural land around the urban area of the City.

The land is generally level with a slight slope to the east. Some gentle rolling hills exist at the western edge of the area. Elevations vary from 20 to 125 feet above sea level with the average elevation of 50 feet. The soils are for the most part prime.

Vegetation varies from exotics within the urbanized area to native grasses and vegetation in the uncultivated areas. The major agricultural crops are tomatoes, rice, wheat, barley and sugar beets. Some walnut and almond orchards are located west and south of the City. Stately Valley Oaks dot the landscape throughout the central and western portions of the General Plan Area.

The major water source for the area for both urban and agricultural uses is groundwater. Cache Creek, which forms the north boundary, is the only major natural surface water in the General Plan Area. It flows from Clear Lake and the Indian Valley Reservoir east to the Cache Creek Settling Basin and Yolo Bypass before reaching the Sacramento River. Water flow is usually limited to winter and spring months. The area is crossed by numerous irrigation canals and ditches which provide water to agricultural lands. The City's waste water treatment plant at the east edge of the area contains approximately 282 acres of waste stablization and chlorination ponds.

A system of City streets and County roads provides access to the varied land uses of the area. Interstate 5 passes through the east and central areas providing a major access to the Sacramento Area and other areas to the north and south. Interstate 5 crosses the General Plan Area in an east-west direction and State Route 113 crosses it in a north-south direction through the center of the area. Watts Airport to the west and Yolo County Airport to the southwest both provide general aviation services to the General Plan Area. Sacramento Metropolitan Airport is approximately ten miles east of Woodland.

The general physical features of the General Plan Area are further addressed in the Open Space, Conservation, Safety and Circulation Elements. In summary, the area is predominantly agricultural, open land with three urban areas. The City of Woodland is the major urban area occupying approximately 9.2 square miles. The Willow Oak Area and the Hillcrest/Monument Hills Area are small rural population centers. The following table 15-1 summarizes the existing land uses in the Woodland General Plan Area:

TABLE 15-1

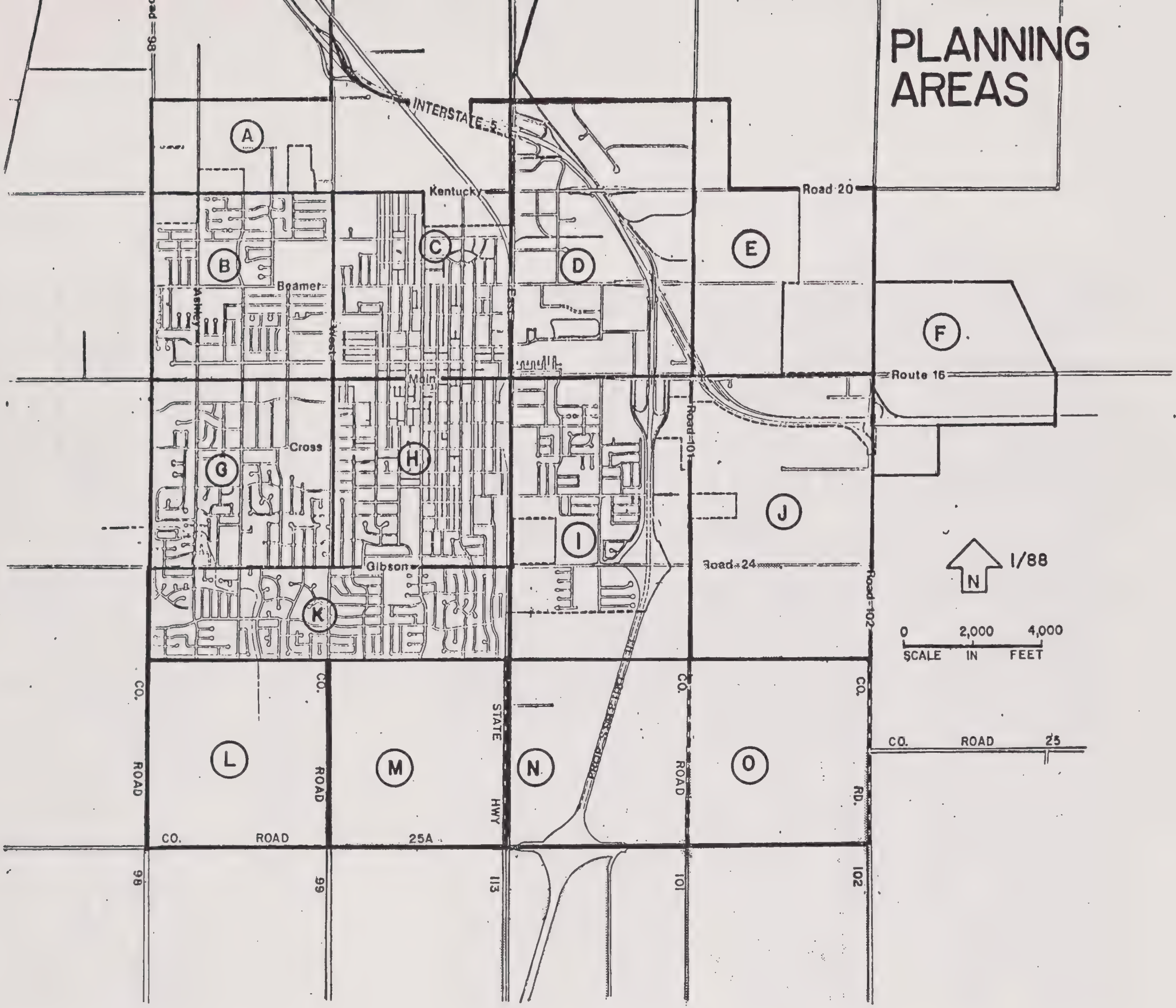
	Acres
City of Woodland and Adjoining Urban Area	7,500
Willow Oak Area	65
Hillcrest/Monument Hills Area	1,600
Agricultural Crop Area and other Open Land Areas	47,000
Total General Plan Area (Approximate)	56,000

II. PLANNING AREA DESCRIPTIONS

To further develop the existing base from which the land use proposals of this plan are derived, this section dwells on the more specific land uses. For convenience of discussion, the City and its immediate area is divided into fifteen planning areas which correlate with minor census tracts and areas divided by the City's major arterial streets. These planning areas are identified by the letters A through O as shown on the Map on Page 15-3. Each area will be described as to its location, General Plan designation and dominant land use characteristics. The area will then be further divided into areas of similar land use characteristics. These latter subdivisions of the eight areas will serve as a base for more detailed descriptions of the land use proposals of this General Plan.

1. Background Terminology

Reference is made to land use designations and zones. The following paragraphs define relevant terminology from the 1979 General Plan, the City of Woodland Ordinance No. 1024 as amended (Zoning Ordinance) and Yolo County Code Chapter 2 of Title 8 (Zoning Regulations).


PLANNING AREAS
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
INTERSTATE 5
Kentucky
Road 20
Boamer
Ashley
West
East
Main
Route 16
Cross
Gibson
Road 24
Road 101
Road 102
1/88
N
0 2,000 4,000
SCALE IN FEET
CO. ROAD 98
CO. ROAD 99
STATE HWY 113
CO. ROAD 101
CO. RD. 102
CO. ROAD 25
CO. ROAD 25A

There are six major land use designations: Agricultural, Open Space, Residential, Commercial, Industrial and Public Service. The Residential designation is further divided into Low Density Residential (0 to 8 units per gross acre, 6 average), Medium-Low Density Residential (0 to 8 units per gross acre, 6 average) and Medium Density Residential (8 to 25 units per gross acre, 20 average). The Commercial designation is further divided into Highway Commercial, Neighborhood Commercial, Central Commercial and Service Commercial designations.

The zoning classifications for the City of Woodland are: A-1 Agricultural Zone, O-S Open Space Zone, R-1 Single Family Residential Zone, R-2 Duplex Zone, N-P Neighborhood Preservation Zone, T Transition Overlay Zone, R-M Multiple Family Residential Zone, P-D Planned Development Overlay Zone, C-1 Neighborhood Commercial Zone, C-2 General Commercial Zone, C-3 Service Commercial Zone, C-H Highway Commercial Zone, I Industrial Zone and F-P Flood Plain Overlay Zone.

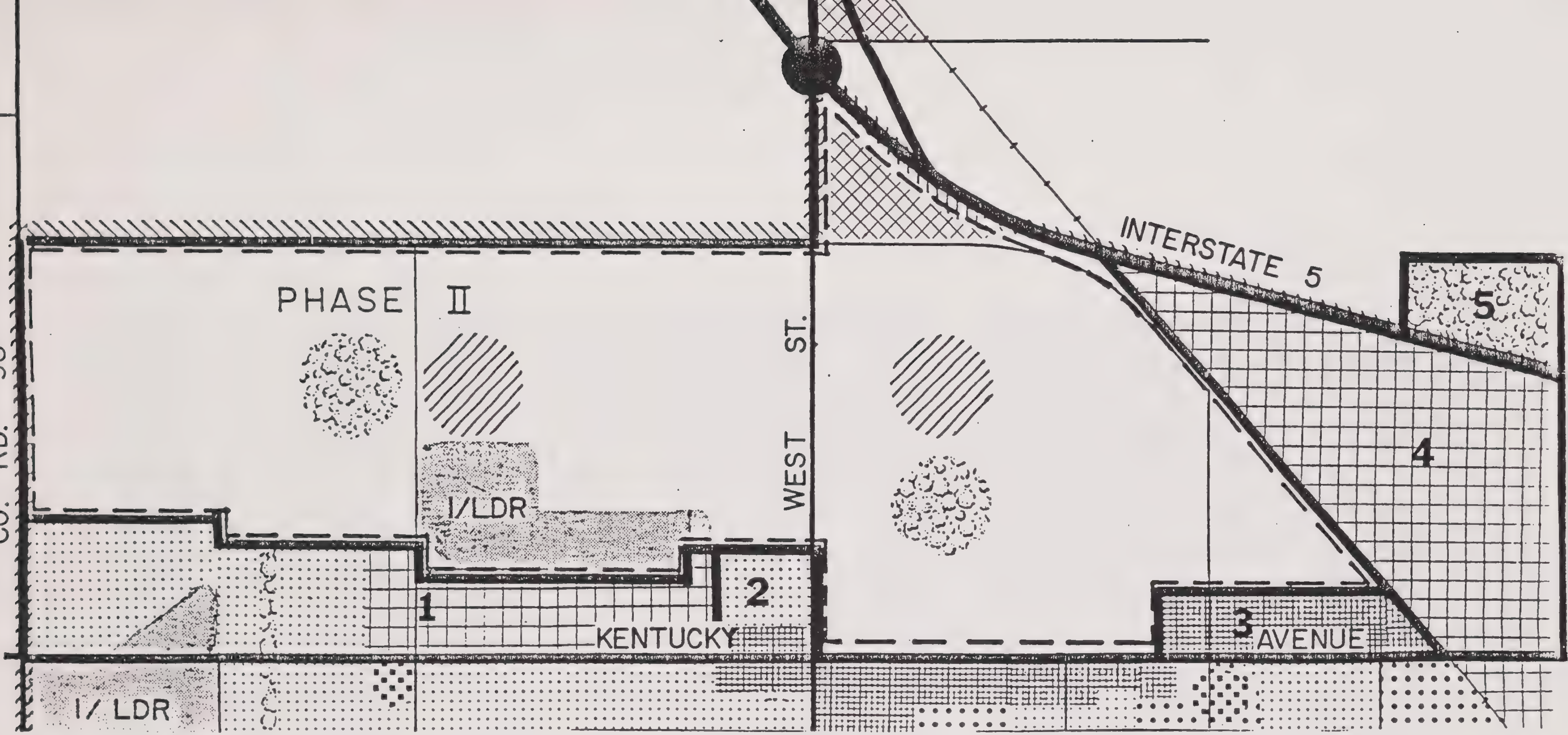
The zoning classifications of the County of Yolo are: A-P Agricultural Preserve Zone, A-E Agricultural Exclusive Zone, A-1 General Agricultural Zone, R-S Residential Suburban Zone, R-1 Residential One Family Zone, R-2 Residential One Family or Duplex Zone, R-3 Multiple Family Residential Zone, R-4 Apartment Professional Zone, C-1 Neighborhood Commercial Zone, C-2 Community Commercial Zone, C-3 General Commercial Zone, C-H Highway Commercial Zone, M-L Limited Industrial Zone, M-1 Light Industrial Zone, M-2 Heavy Industrial Zone, PR Park and Recreation Zone, PD Planned Development Zone and AV Airport Zone.

2. Planning Area A

See map on Page 15-5.

Planning Area A is located north of Kentucky Avenue between County Road 98 and East Street (State Route 113). The area contains approximately 657 acres.

Circulation routes in this area consist of four major arterials, East Street, County Road 99 (West Street), County Road 98 and Kentucky Avenue. Only East Street and a small portion of Kentucky Avenue are improved to four lanes. Interstate 5 passes through the northeastern portion of the area with interchanges at each of the north-south arterials. No system of minor and collector streets exists. The Southern Pacific Railroad passes through the east portion of the area with its mainline angling in a northwesterly direction and a spur paralleling East Street. All of the arterials, I-5 and the railroad are considered to be noise generators.



PHASE II RESIDENTIAL

LOW DENSITY RESIDENTIAL

MEDIUM DENSITY RESIDENTIAL

SERVICE COMMERCIAL

NEIGHBORHOOD COMMERCIAL

HIGHWAY COMMERCIAL

INDUSTRIAL

OPEN SPACE

PUBLIC SERVICE

N

SCALE: 1" = 1000'

AREA A

As indicated previously, the City sewer system has the capacity to serve this area except for the area north of I-5. The service lines have not been extended because most of the area is outside the City Limits and is in Phase II.

3. Planning Area B

See map on Page 15-7.

Planning Area B is bound by West Kentucky Avenue, West Street, West Main Street and County Road 98. This area encompasses approximately 640 acres of land.

The perimeter streets of Area B along with West Court Street are major arterial streets. Collector streets form a grid type circulation system. They include Ashley Avenue, Cottonwood Street, California Street, West Woodland Avenue and West Beamer Street.

Water, sewer and storm drainage systems serve this area except for the undeveloped northwest portion of Area B which is outside the City limits.

The area has a neighborhood park, a greenbelt park and an elementary school along with the Community Swim Center, senior high school, various county facilities and Yolo General Hospital.

4. Planning Area C

See map on Page 15-8.

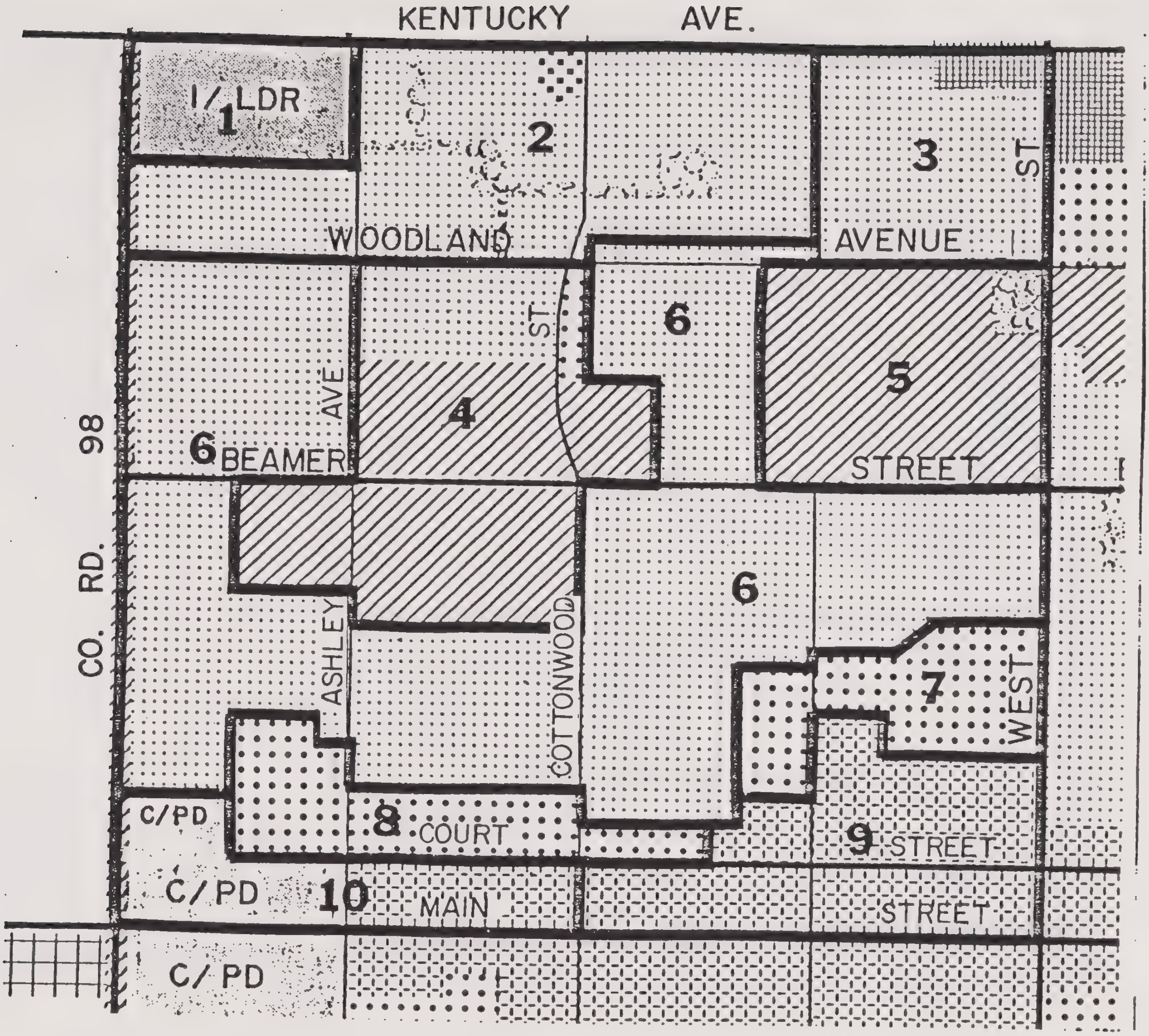
Planning Area C is bound by Kentucky Avenue, East Street, Main Street and West Street. Area C encompasses approximately 640 acres of land.

The area from Main Street to Beamer Street was within the original City Limits and contains some of the older housing in Woodland. Only the northwest portion of Area C-3 remains outside the City Limits.

The designated major arterial streets of Area C are the perimeter streets and West Court Street. Main and East Streets have been fully improved with four lanes of traffic. College, Third and Beamer Streets and Woodland Avenue serve as collector streets in the area.

Water and sewer services are available for the entire area.

Two elementary schools, two neighborhood parks and two ball fields are located within this planning area along with the major administrative facilities of the City and County.



LOW DENSITY RESIDENTIAL

MEDIUM DENSITY RESIDENTIAL

SERVICE COMMERCIAL

CENTRAL COMMERCIAL

NEIGHBORHOOD COMMERCIAL

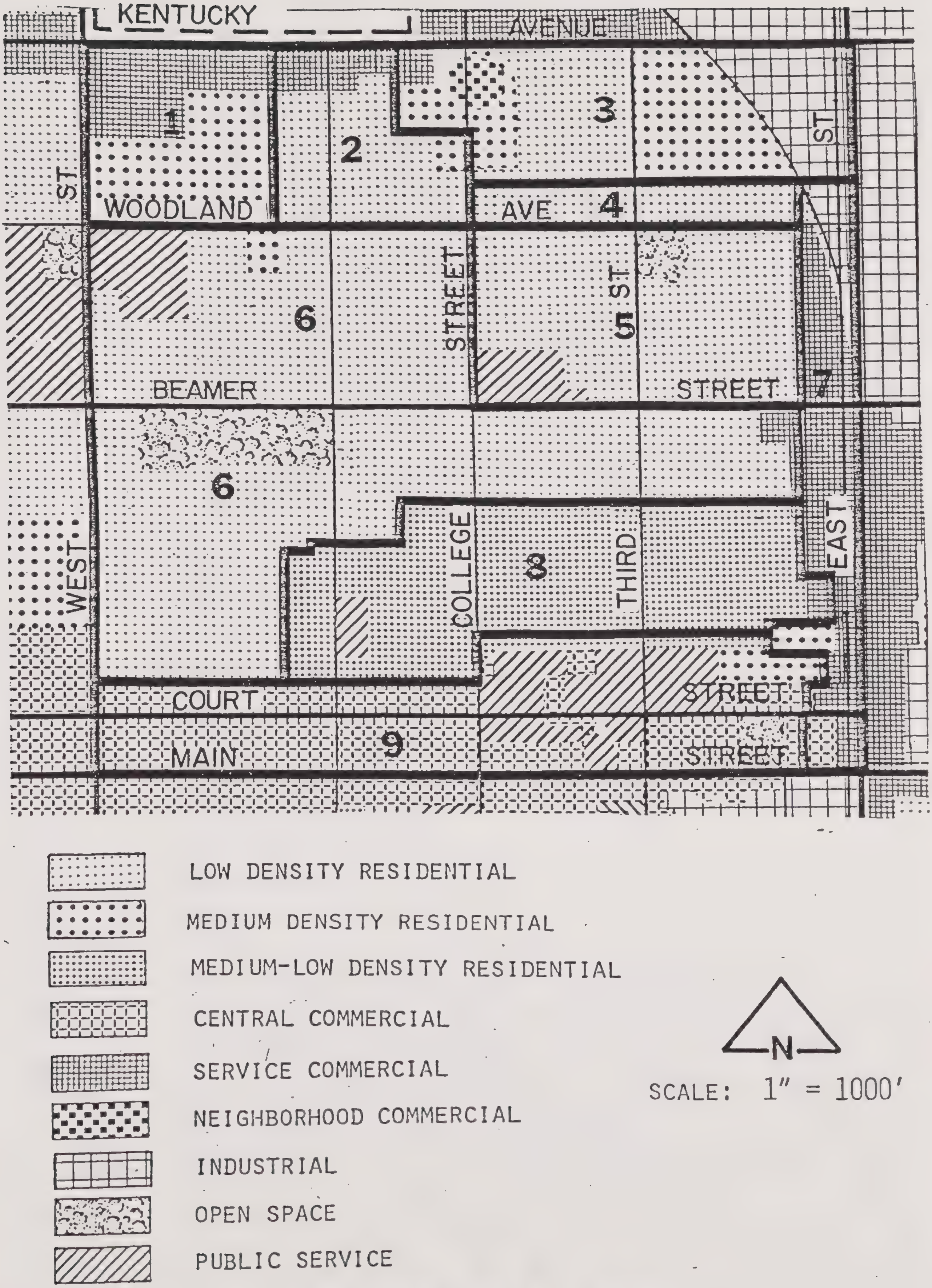
OPEN SPACE

PUBLIC SERVICE

N

SCALE: 1" = 1000'

AREA B


KENTUCKY
AVENUE
WOODLAND
AVE
ST
BEAMER
STREET
COURT
MAIN
WEST
COLLEGE
THIRD
EAST
1
2
3
4
5
6
6
7
8
9
LOW DENSITY RESIDENTIAL
MEDIUM DENSITY RESIDENTIAL
MEDIUM-LOW DENSITY RESIDENTIAL
CENTRAL COMMERCIAL
SERVICE COMMERCIAL
NEIGHBORHOOD COMMERCIAL
INDUSTRIAL
OPEN SPACE
PUBLIC SERVICE
N
SCALE: 1" = 1000'

AREA C

5. Planning Area D

See map on Page 15-10.

Planning Area D is the main industrial area of Woodland. It is bound on the north by Churchill Downs Avenue (a half mile north of Kentucky Avenue), on the east by County Road 101, on the south by East Main Street and on the west by East Street (State Route 113).

With the exception of Yolano Village, highway commercial areas at the I-5 interchange at East Street, and service commercial along East Street from East Beamer Street to East Main Street, this 960-acre area is designated for industrial use.

Area D is divided by the Interstate 5 freeway which passes in a northwest/southeasterly direction. It intersects with the State Route 113 Freeway in the vicinity of East Beamer Street.

The circulation system within Area D is primarily based on the County road grid system. The major north-south streets are County Roads 101 and East Street; the east-west streets are East Kentucky Avenue and East Main Street.

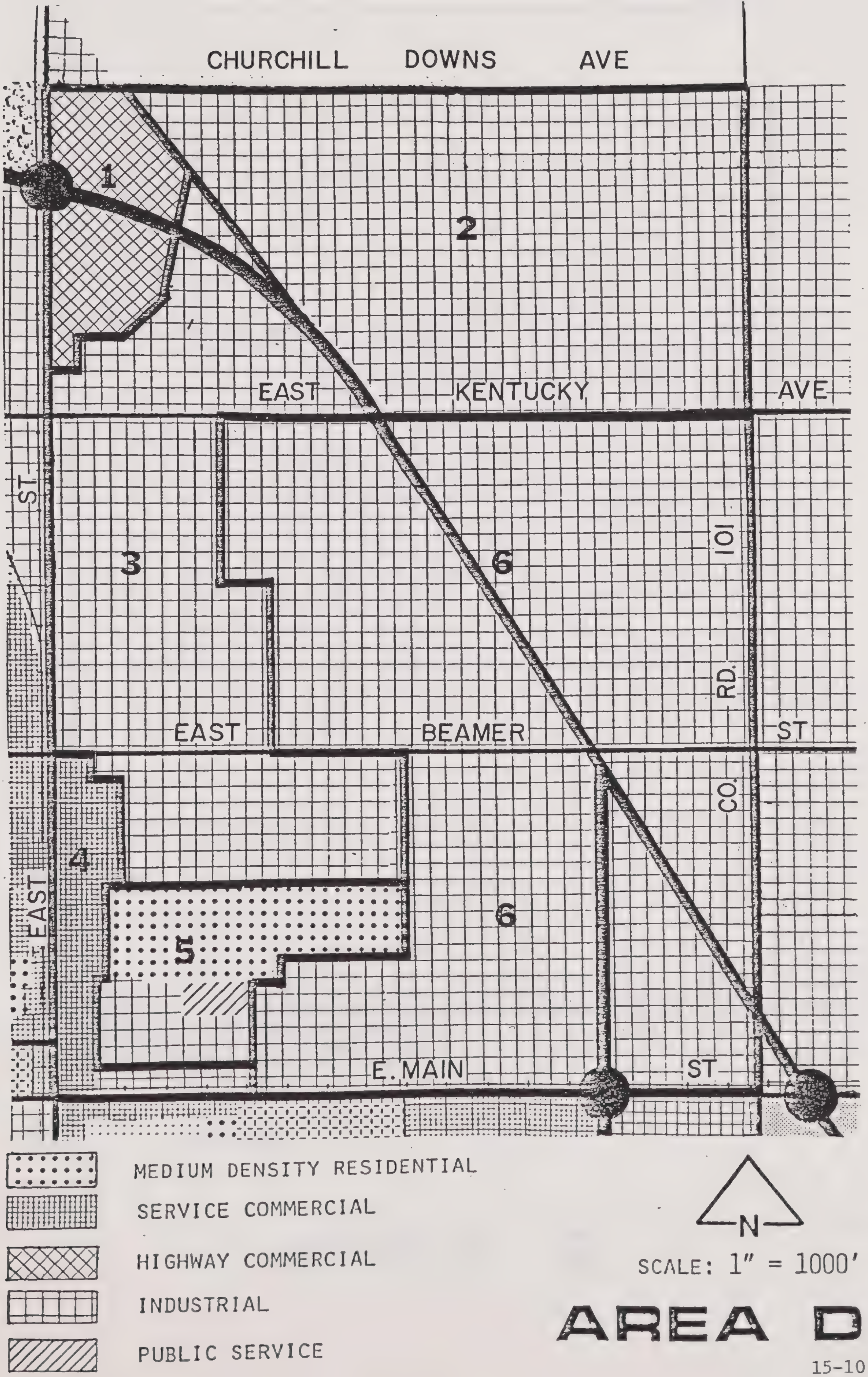
The Sacramento Northern Railroad (Union Pacific) line parallels East Main Street to East Street and has several spurs which extend north into Area D. The Southern Pacific spurs extend into and serve this area from the mainline along East Street.

With the exception of parcels along the east half of Churchill Downs Avenue, all the area west of County Road 101 can be served by City sewers.

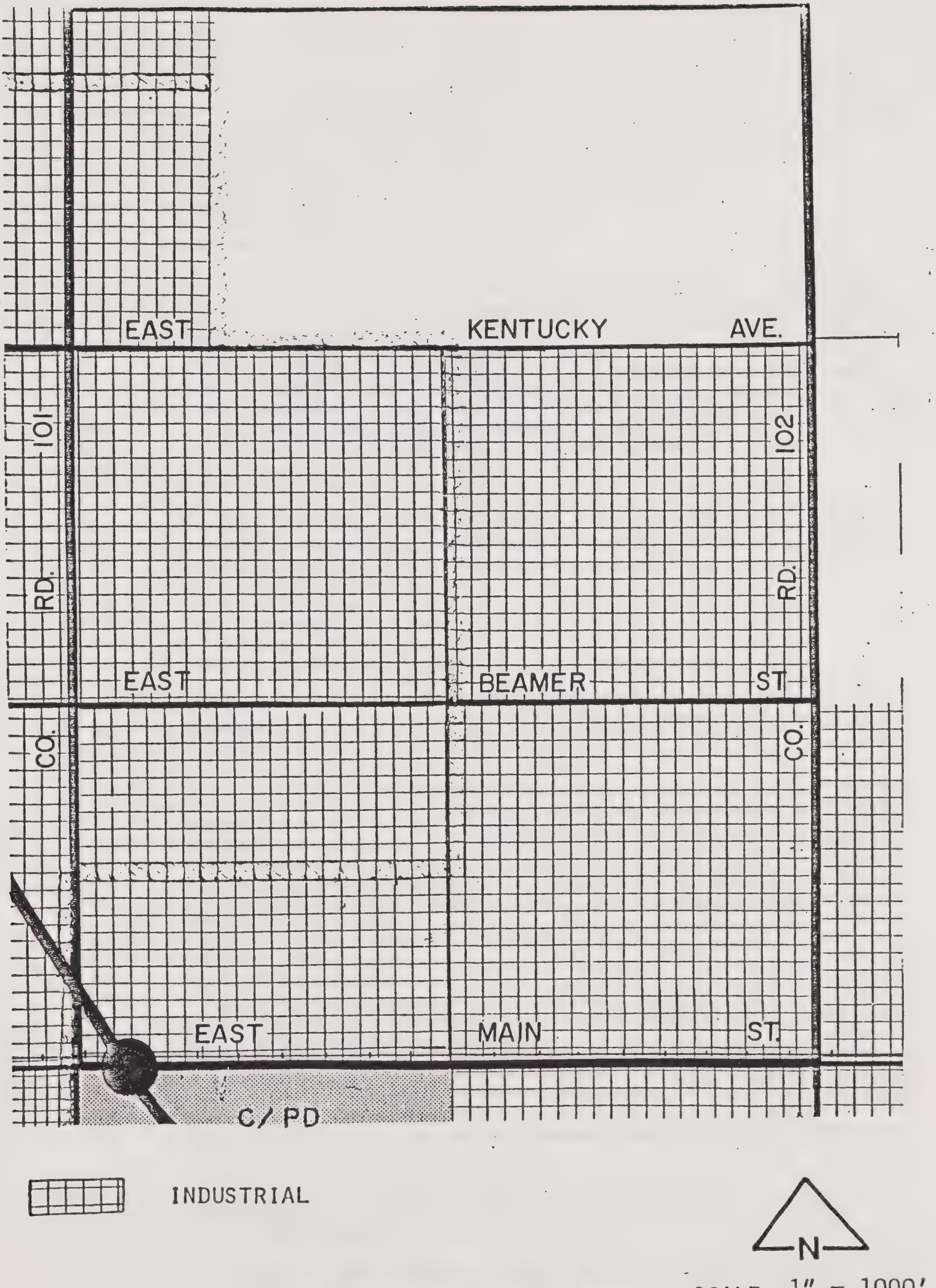
6. Planning Area E

See Map on Page 15-11.

This 700-acre industrial area contains much vacant land. The north portion of the area is owned by Spreckels Sugar which farms the land. Two small agricultural related industrial uses are located adjacent to County Road 101 in this section. The east portion of the central section of Area E is owned by the City of Woodland and is occupied by the original City treatment plant. This facility is being phased out as a sewer treatment facility and a portion will be developed as part of the storm drainage collection system with the remainder possibily being available for sale. There are several other industrial uses in this area including the 500,000+ square foot Payless Distribution Center and the Woodland Biomass Facility. The industrial land uses in the southern section of Area E south of East Beamer, include two mobile home plants, a trucking company, a seed company and a grain mill. Much of this section is undeveloped and the east half of this area is not in the City. City utility services will not be available in this


CHURCHILL DOWNS AVE
EAST KENTUCKY AVE
EAST BEAMER ST
E. MAIN ST
EAST ST
CO. RD. 101
1
2
3
4
5
6
6
MEDIUM DENSITY RESIDENTIAL
SERVICE COMMERCIAL
HIGHWAY COMMERCIAL
INDUSTRIAL
PUBLIC SERVICE
N
SCALE: 1" = 1000'

AREA D


EAST
KENTUCKY
AVE.
101
RD.
CO.
102
RD.
CO.
EAST
BEAMER
ST
EAST
MAIN
ST.
C/PD
INDUSTRIAL
N
SCALE: 1" = 1000'

AREA E

eastern part of the area until an assessment district is formed.

7. Planning Area F

See map on Page 15-13.

This area east of CR 102 contains approximately 410 acres north of I-5 which is zoned industrial. The new Target Distribution Center complex is located on the east side of County Road 102 south of East Beamer Street. There is a cluster of light industrial development located east of County Road 102 between East Main and I-5. Approximately 54 acres of land at the southeast corner of County Road 102 and I-5 have been included with the Urban Limit Line. The balance of the area is undeveloped.

No City utility services exist in this area and the area is currently under a building moratorium until an assessment district is formed.

8. Planning Area G

See map on Page 15-14.

Planning Area G is primarily a residential area. It is bound by West Main Street, West Street, West Gibson Road and County Road 98.

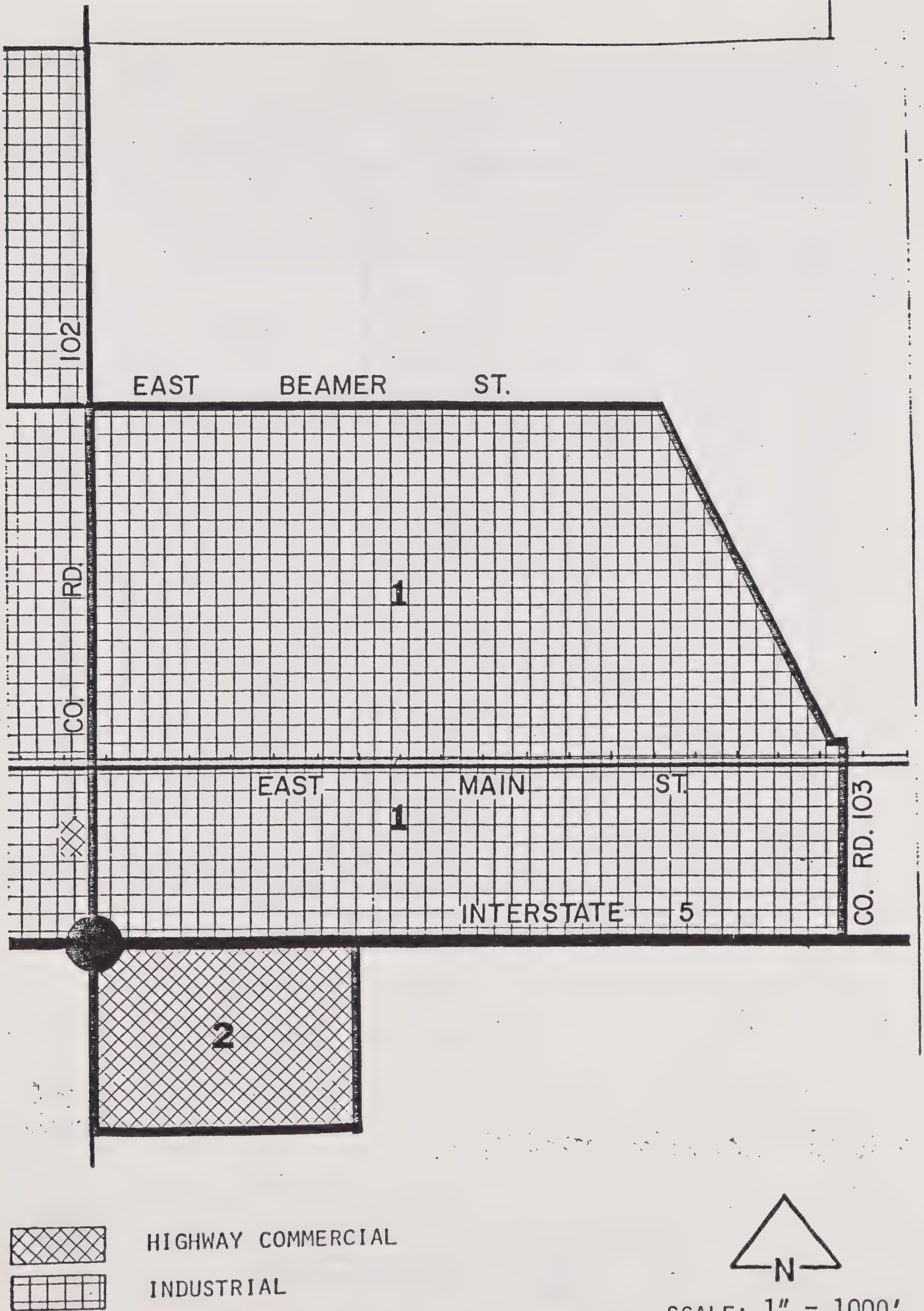
All of the unincorporated land which existed in 1979 has been annexed and development plans have been approved for all of the undeveloped acreage. Several new subdivisions are under construction along County Road 98. A new shopping center has been completed at Brown's Corner. Many apartments have been built between West Cross Street and West Lincoln Avenue. The Safeway-Longs Center at West and Main Streets was developed in 1981.

The perimeter streets of this planning area are major arterials but only West Main Street and West Gibson Road have been developed as four lane arterials.

California Street, Cottonwood Street and West Southwood Drive serve as collector streets in the area. West Lincoln Avenue, West Cross Street and Ashley Avenue also serve as collectors.

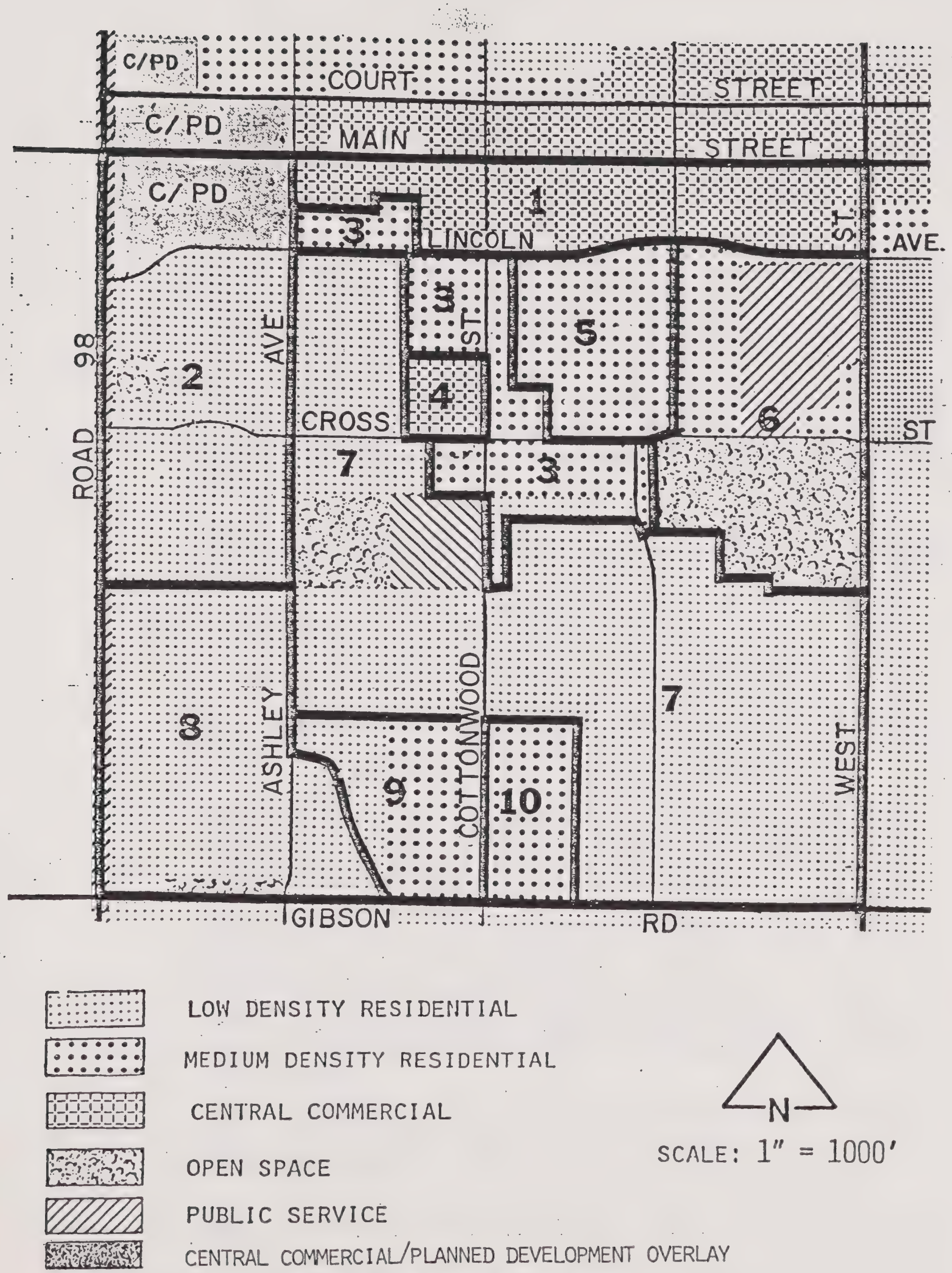
Public uses in this area include an elementary school, a junior high school, Woodland Center of Yuba College, a neighborhood park, two cemeteries and a hospital.

A storm drainage problem exists on the west side of Area G and is being mitigated through the use of drainage ponds both north and south of West Gibson Road and in the Faria Park and Sunrise subdivisions.



EAST BEAMER ST.
CO. RD. 102
1
EAST MAIN ST.
1
INTERSTATE 5
CO. RD. 103
2
HIGHWAY COMMERCIAL
INDUSTRIAL
N
SCALE: 1" = 1000'

AREA F


C/PD
COURT
STREET
C/PD
MAIN
STREET
C/PD
1
3
LINCOLN
ST
AVE.
3
ST
5
98
AVE
2
4
CROSS
6
ST
ROAD
7
3
7
8
ASHLEY
COTTONWOOD
9
10
WEST
GIBSON
RD
LOW DENSITY RESIDENTIAL
MEDIUM DENSITY RESIDENTIAL
CENTRAL COMMERCIAL
OPEN SPACE
PUBLIC SERVICE
CENTRAL COMMERCIAL/PLANNED DEVELOPMENT OVERLAY
N
SCALE: 1" = 1000'

AREA G

9. Planning Area H

See map on Page 15-16.

Planning Area H encompasses approximately 640 acres of land bound by Main Street, East Street, Gibson Road and West Street. Although primarily residential, the area does include the original industrial area along the eastern boundary and the downtown commercial area along the south side of Main Street.

This area is developed in a grid street pattern with major arterials on the perimeter. Cleveland, College and Third Streets serve as the north-south collector streets and Lincoln Avenue, Cross Street and Pendegast Street as the east-west collectors.

There are three neighborhood parks, an elementary school, a junior high school and a City swimming pool in this planning area.

10. Planning Area I

See map on Page 15-17.

Planning Area I is located east of East Street. It is bound by East Main Street, County Road 101, East Street and a line parallel to and one-half mile south of East Gibson Road.

The area is mostly residential with commercial development along East Street and East Main Street. New shopping centers are located at Matmor Road and East Main Street (K-mart) and at East Street and Gibson Road (County Fair Mall).

Circulation in this area relates to the major arterial streets. Matmor Road, East Oak and East Gum Avenues serve as the collector streets. The proposed 113 Freeway, for which the right-of-way has been acquired, extends in a north-south direction through the area between County Road 101 and Matmor Road. Construction is expected to be completed on State Route 113 in 1990.

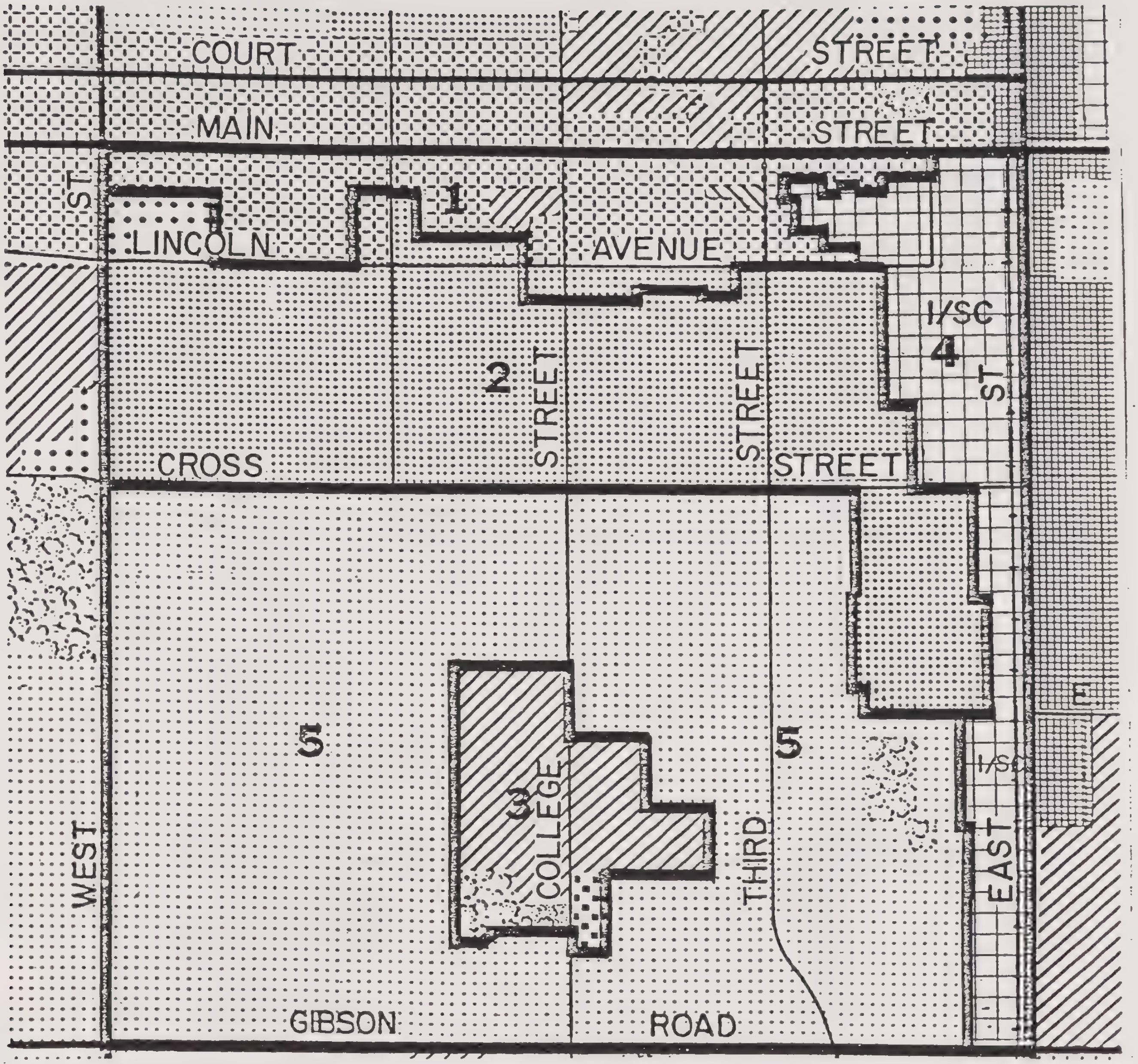
Public facilities in this area are an elementary school, a neighborhood park, the Yolo County Fairgrounds and a park/school site.

Ability to provide sewer service to vacant portions of Area I varies.

11. Planning Area J

See map on Page 15-18.

Planning Area J encompasses approximately 960 acres of land and is bound by County Road 101, East Main Street, County Road

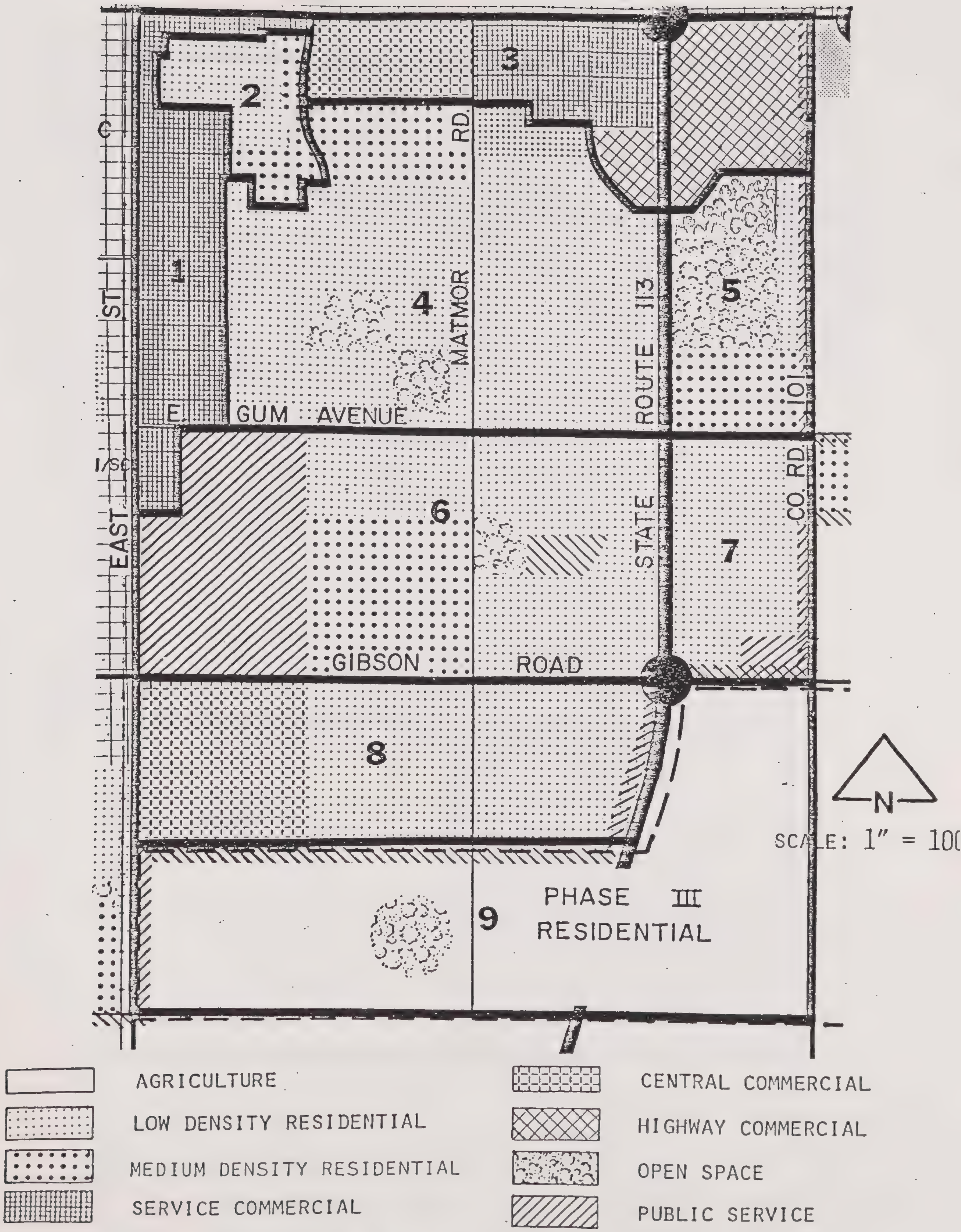


	LOW DENSITY RESIDENTIAL
	MEDIUM DENSITY RESIDENTIAL
	MEDIUM-LOW DENSITY RESIDENTIAL
	CENTRAL COMMERCIAL
	NEIGHBORHOOD COMMERCIAL
	INDUSTRIAL
	OPEN SPACE
	PUBLIC SERVICE

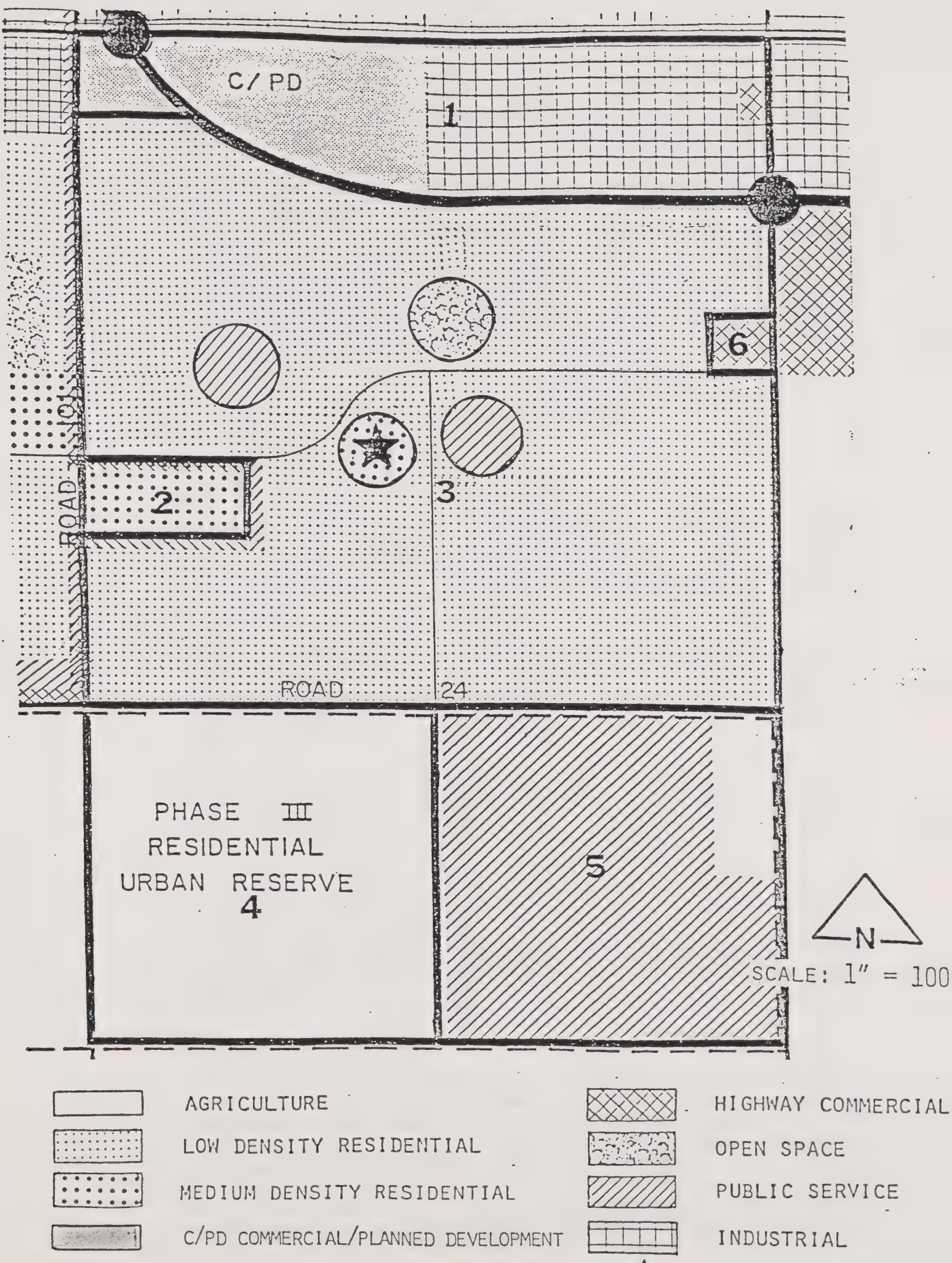
N

SCALE: 1" = 1000'

AREA H


1
2
3
4
5
6
7
8
9
MATMOR RD
STATE ROUTE 113
CO RD 101
E. GUM AVENUE
EAST ST
GIBSON ROAD
PHASE III
RESIDENTIAL
N
SCALE: 1" = 10
AGRICULTURE
LOW DENSITY RESIDENTIAL
MEDIUM DENSITY RESIDENTIAL
SERVICE COMMERCIAL
CENTRAL COMMERCIAL
HIGHWAY COMMERCIAL
OPEN SPACE
PUBLIC SERVICE

AREA I



AREA J

★ SEE J-3 TEXT

102 and a line one-half mile south of and parallel to East Gibson Road.

There is scattered development along East Main Street and a mobile home park on County Road 101. The California Highway Patrol Office and a service station are located at County Road 23 and County Road 102. The County Animal Control Shelter, the Yuba College site and the new County Jail are located on the south side of East Gibson Road. Planning Area 4 is in a Williamson Act agricultural preserve. The balance of the entire area is being farmed. Interstate 5 cuts across the northern section of the area.

City utility services are not available to this area.

12. Planning Area K

See map on Page 15-20.

Planning Area K is a newer residential area of the City. It is bound by Gibson Road, the Southern Pacific Railroad tracks and East Street (State Route 113), the Farmers Central Ditch along County Road 24-A one-half mile south of Gibson Road and County Road 98.

With the exception of two small areas, Area K is developed with low density residential uses. The area at the southwest corner of East Street and Gibson Road is industrial and the area at the southeast corner of Area K contains medium density residential uses.

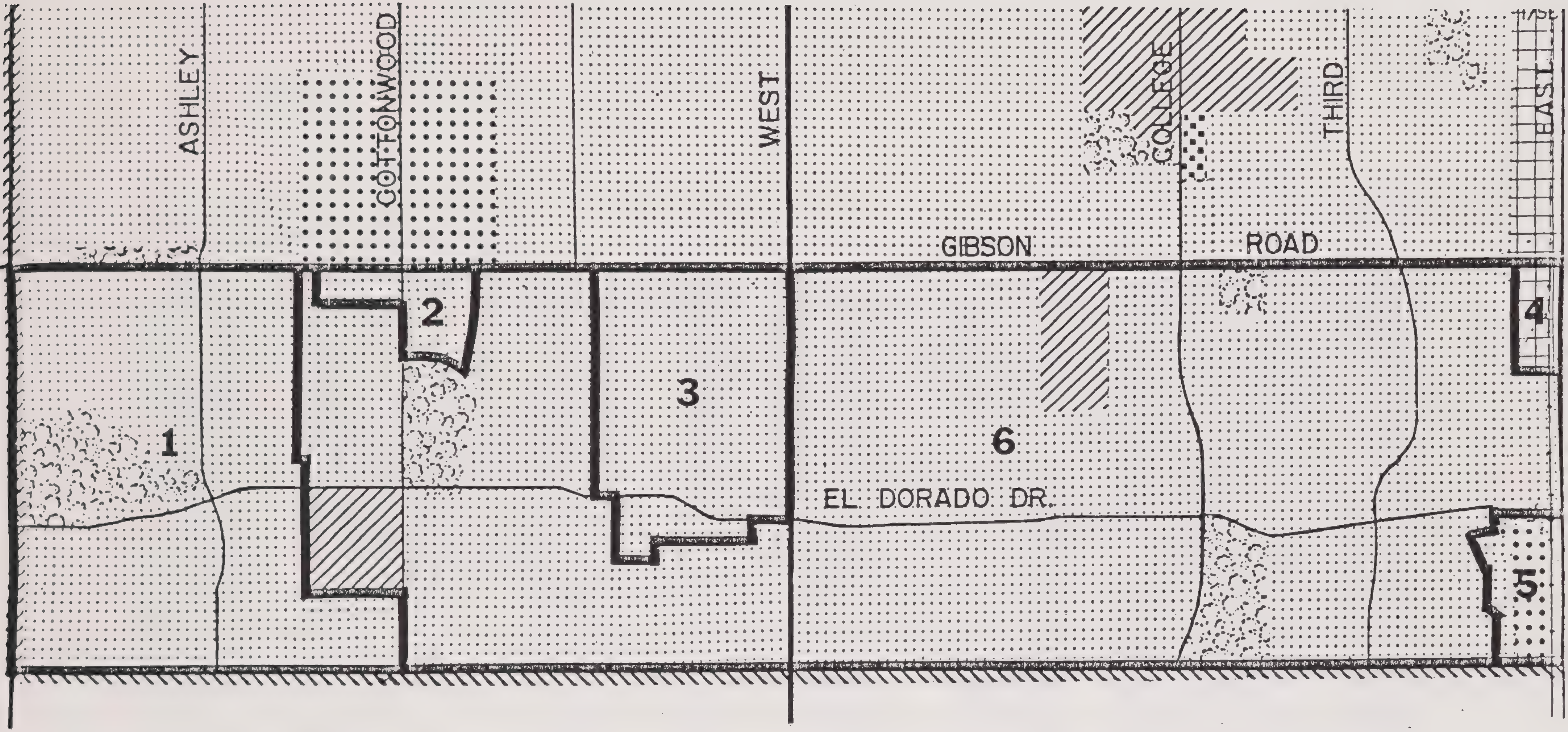
County Road 98, West Street, East Street and Gibson Road have been identified as major arterial streets in this area. Only Gibson Road has four traffic lanes. College Street, Cottonwood Street and El Dorado Drive are collector streets.

Public facilities in this area include two elementary schools, two neighborhood parks, a mini-park, ten-acre park/pond area and the Gibson House Museum. The Union Canal passes through the west half of Area K and becomes the Farmers Central Ditch which forms the southern boundary of the area. Area K is fully developed.

13. Future Planning Areas

Four additional areas have been designated as future planning areas (L,M,N,O). These four areas, each containing approximately 640 acres, are adjacent to the southerly Urban Limit Line and extend from County Road 98 to County Road 102 and from County Road 24-A to County Road 25-A.

These areas are shown, not as a committment to future urban development, but as the probable direction of urban growth at



LOW DENSITY RESIDENTIAL

MEDIUM DENSITY RESIDENTIAL

INDUSTRIAL

OPEN SPACE

PUBLIC SERVICE

N

SCALE: 1" = 1000'

AREA K

some future time. The one square mile areas are a logical and convenient size for statistical purposes in the event that growth to the south is contemplated at some time in the future.

14. Areas Outside the Fifteen Planning Areas

Other developed areas outside the major planning areas are the Monument Hill/Hillcrest Estates Area, Willow Oak Area, developments along Highway 16 and State Route 113 north of I-5. There are farm houses and related agricultural structures throughout the General Plan Area. Uses in all these areas are dependent upon private wells and septic tank systems.

The Hillcrest/Monument Hills Area is located in the west portion of the General Plan Area in the vicinity of Highway 16 and County Roads 94B and 95. This area encompasses approximately 1,600 acres and includes residential parcels ranging from one-half to five acres in size. This area also includes the Watts Airport, the Yolo Fliers Country Club and the Monument Hills Cemetery.

The Willow Oak Area is located one mile west of County Road 98 in the vicinity of Highway 16 and County Road 97. This area includes a grocery store and a few commercial and agricultural related businesses along with a number of residences on parcels of approximately one acre.

Development along Highway 16 west of County Road 98 and for approximately one-half mile has remained in agricultural use on the north side and agricultural related industries on the south side.

The Area along Highway 113 north of the I-5 Freeway overpass and along County Road 18-C has been developed with a few industrial uses and agricultural related industries including the Spreckels Sugar Refinery and a fertilizer plant.

PUBLIC SERVICES AND FACILITIES

The City of Woodland provides a range of urban services to its incorporated area. These include police and fire protection, public works services (sewage disposal, water, storm drainage, street construction and maintenance, street tree planting and maintenance, trash pick-up, solid waste disposal), library services, parks and recreation programs, building inspection, planning and general City administration.

Other public services available to the City and the General Plan Area include educational opportunities through the public school districts of Woodland Joint Unified School District for elementary, junior and senior high school, and adult education; Yuba Community College District with a Woodland Center; private schools; social,

health and welfare services administered through the County of Yolo; public transportation (related in the Circulation Element); and postal service.

The outlying areas benefit from County and special district services, Woodland Joint Unified School District and in several areas, private water districts.

15.0 LAND USE

SOURCES

1. Woodland General Plan - 1979

2. Final EIR, Highway 113 Realignment, September 1985

3. 2002 Conference, City of Woodland, June 1986

Risk of Upset and Injury

16. RISK OF UPSET & INJURY

POTENTIAL HAZARDS

Fire presents one of the greater hazards to safety in the Woodland area. In 1986, the City Fire Department responded to approximately 2,050 calls. One of the major problems exist with bulk storage areas for petroleum and gaseous products such as propane and butane. The storage and use of flammable and combustible liquids is restricted by the Uniform Fire Code. Other potential hazards exist with transportation routes, both highway and rail, through the City.

The Southern Pacific and the Union Pacific (Sacramento Northern) railroad lines traverse the City. There are potential dangers from train wrecks, explosions, leaking chemicals, etc. Depending on the location of such an occurrence, the degree of disaster could vary significantly. There is no specific way to plan for these dangers but increased cognizance of the problems relating to equipment and train maintenance, loading requirements and vandalism surveillance on the part of the railroad may reduce potential problems. Consideration should also be given to these potential hazards in the planning and approval of future development. The County of Yolo is preparing a Hazardous Materials/Storage Plan to address the problems associated with the handling, storage and transporation of hazardous materials.

Similar potential hazards exist in truck shipments along I-5 and Highways 113 and 16 although the risk is reduced somewhat by more convenient access to the site of the accident. Also, lower speeds on City streets and on rail lines through the City reduce some risk.

Vehicular circulation is occasionally interrupted by trains blocking streets near East Street. This presents a potential problem in the event of an emergency where it is necessary for emergency vehicles to cross the tracks. General Order No. 135 of the Public Utilities Commission (effective November 1, 1979) limits the time a train may stand blocking a crossing to ten minutes.

Winds in the Woodland area have been recorded at 65 miles per hour. These windstorms have, at times, created problems in the City. Falling trees and limbs and downed powerlines are the more frequent hazards and inconveniences created by strong winds. The City's tree maintenance program has helped to reduce some hazards and provides for the clearance of fallen limbs and trees that may affect circulation. The hazards of fire are also increased with strong winds.

In order to comply with the State Health and Safety Code, the Yolo County Office of Emergency Services is conducting an inventory of hazardous materials within the City of Woodland. When the inventory is completed, it will be forwarded to the City Fire Department so they can deal with hazardous materials in case of an emergency.

The Community Development Department has established a procedure to refer business license applications to the County Office of Emergency Services and

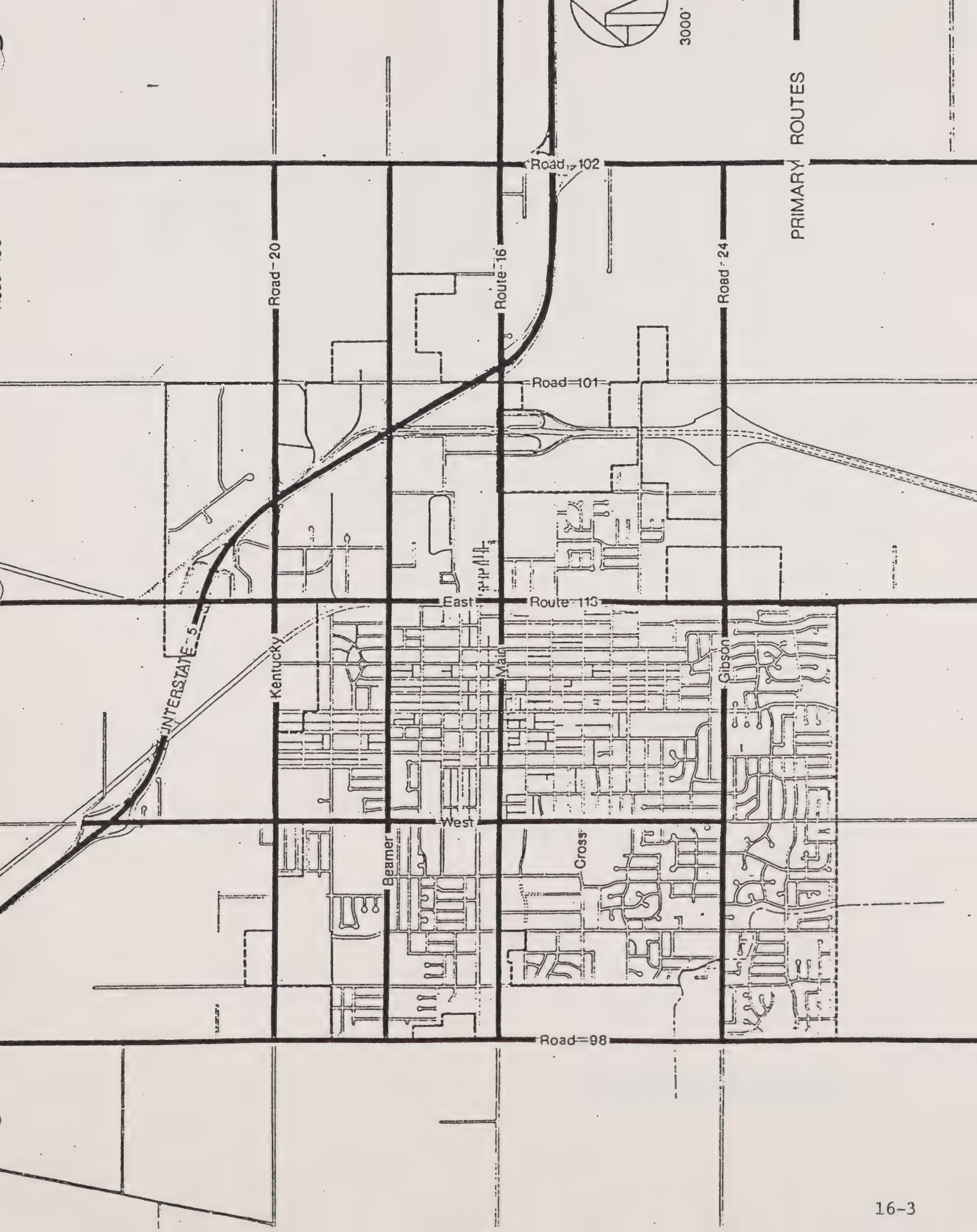
the City Fire Department. Applications that raise the possibility that a business may store or use hazardous materials are referred to Emergency Services and the City Fire Department. This provides those agencies with an update inventory to deal with hazardous materials in cases of emergency.

Safety hazards related to war or a national disaster also exist. The City has little control over these situations but has developed an emergency plan to be activated in the event of such an emergency. See Figure 16-1 Evacuation Routes.

The City has adopted the current edition of the Uniform Fire Code which establishes fire safety standards. It is the intent of the Uniform Fire Code to prescribe regulations consistent with nationally recognized good practice for the safeguarding, to a reasonable degree, of life and property from the hazards of fire and explosion arising from the storage, handling, and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or premises. The provisions of this Code supplement any and all laws relating to fire safety and applies to all persons.

EVACUATION ROUTES

FIGURE 16-2



Population

17. POPULATION

SETTING

Facts: The City of Woodland, the County Seat of Yolo County, is classified for census purposes as a Central City within the four county Sacramento Metropolitan Statistical area which includes El Dorado, Placer, Sacramento and Yolo Counties. Woodland is also a member jurisdiction of the four county Sacramento Area Council of Governments (SACOG) which includes Sacramento, Sutter, Yolo and Yuba Counties. As part of the Sacramento region, the City of Woodland shares many of the characteristic problems and opportunities of the region. Home prices, rents, salaries and wages and construction materials and labor costs in Yolo County are all similar to those of the region.

The City of Woodland is centrally located within Yolo County and is the second largest incorporated city in the County with an estimated January 1, 1988 population of 36,941 persons. Yolo County's estimated 1988 population is 133,476 persons.[1]

The Woodland General Plan area encompasses 56,000 acres which includes considerable land beyond the Urban Limit Line and present City Limits. The Land Use Element of the General Plan has established an Urban Limit Line which is shown as Figure 17-1. This 7700 acre area establishes the outer boundaries for future urban-type land uses for the year 2010 and includes some 1142 acres of vacant land in anticipation of future residential growth needs. The boundaries were established to provide not only for future growth but for the preservation of prime agricultural land.

17.A POPULATION CHARACTERISTICS

1. Total Population and Growth Trends

The January 1, 1988 California Department of Finance population estimate for the City of Woodland indicated a population of 36,941 persons. The 1980 Census indicated a population of 30,235 persons which was a 46.2% increase over the 1970 Census population of 20,677 persons. During the decade of the seventies the annual growth rate averaged 3.9%. The annual growth rate from 1980 to 1987 was 2.8% which indicates a short term decline. The estimated group quarters population on January 1, 1987 was 848 persons which is a 9.7% increase over the 1980 Census population of 773 persons. Table 17-1 illustrates these numbers.

2. Age

The 1980 Census median age for Woodland was 29.3 years of age which represents a slight increase from the 1970 Census median age of 28.2 years of age.

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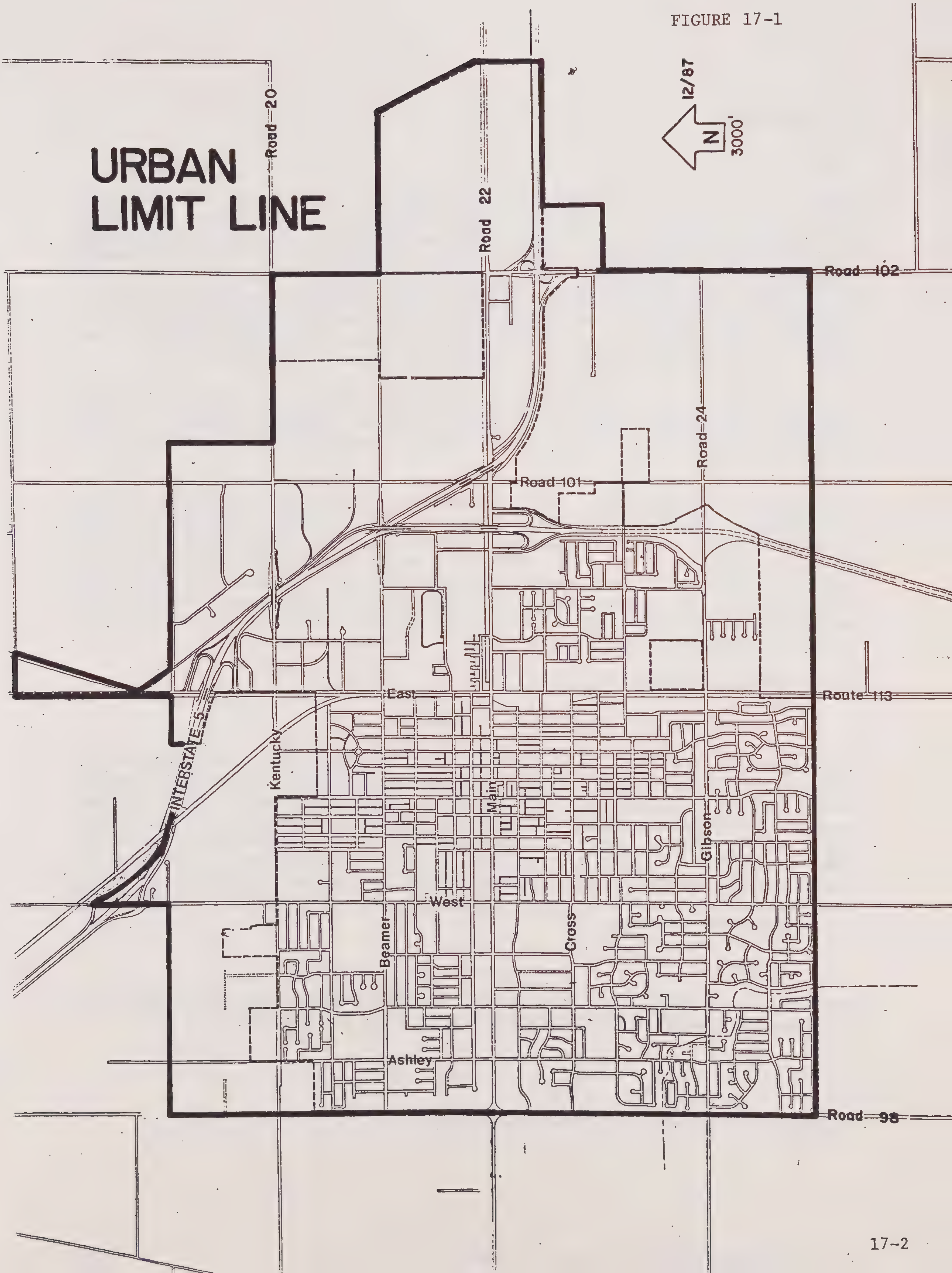
[1] California Department of Finance Estimates

FIGURE 17-1


URBAN
LIMIT LINE
12/87
N
3000'
Road 20
Road 22
Road 102
Road 24
Road 101
East
Route 113
INTERSTATE 5
Kentucky
Main
Gibson
West
Beamer
Cross
Ashley
Road 98

A comparison of the age distributions between 1970 and 1980, shown on Table 17-2, indicates that there were numerical increases in all of the age group categories from 1970 to 1980. The largest numerical increases occurred in the 20-34 age group (91.6% increase), 65 + age group (64.9% increase) and 55-64 age group (51.1% increase). From 1970 to 1980 there was a decrease in the percentage of the population in the age groups 0-19, and 35-54 and an increase in the percentage of the population in the age groups 20-34 and 55 and over.

The large numerical and proportional increase in the age group 20-34 indicates that there should be considerable demand for housing for young singles, married couples and those starting families. The 1980 Census Age Distribution indicated in Table 17-2 is very similar to the State as a whole and is a reflection of smaller family sizes, the maturing of the post WWII generation and a gradual increase in the number of elderly.

3. Race/Ethnicity

Table 17-3 indicates the Race/Ethnicity of the citizens of Woodland from the 1980 Census. Woodland is a largely white community (81.9% of persons). The remaining ethnic composition is as follows: 1.87% Asian (predominantly Japanese, Chinese, Filipino, Asian Indian), 1.1% Black, 1% Native American (American Indian, Eskimo and Aleut) and 14.1% all others. The largest minority group in Woodland is persons of Spanish Origin. This group of 6,850 persons comprises approximately 22.7% of the total population. It is important to bear in mind that in the 1980 Census, Spanish Origin persons may racially be white, black, American Indian or other. Spanish Origin refers to persons of Mexican, Puerto Rican, Cuban or other Spanish origin and is not a racial category. Spanish Origin is a non-additive category in the 1980 Census.

TABLE 17-1

1988 TOTAL POPULATION AND GROWTH TRENDS						
JURISDICTION	TOTAL POPULATION					
	1950[1]	1960[2]	1970[3]	1975[4]	1980[5]	1988[6]
Woodland	9,386	13,524	20,677	25,389	30,235	36,941
Group Quarters Population	-	-	470	604	773	848
Household Population	-	-	20,207	24,785	29,462	36,093
Yolo County	40,640	5,727	91,788	100,783	113,374	133,476
Sacramento SMSA (Placer, Sacramento, Yolo)	-	-	803,793	-	1,014,002	-

POPULATION AND PERCENT CHANGE				
	POPULATION		PERCENT CHANGE 1970 TO 1980	ANNUAL GROWTH RATE 1970 TO 1980
	1970	1980		
Woodland	20,677	30,235	46.2%	3.9%
Yolo County	91,788	113,374	23.5%	2.1%
Sacramento County	634,373	783,381	23.5%	2.1%
Sacramento SMSA (Placer, Sacramento, Yolo)	803,793	1,014,002	26.2%	2.4%

[1] 1950 Census
[2] 1960 Census
[3] 1970 Census
[4] 1975 Special Census
[5] 1980 Census
[6] January 1, 1988 California Department of Finance Estimate

TABLE 17-2

AGE DISTRIBUTIONS FOR 1970[1] AND 1980[2]

	1970		1980		Increase 1970 to 1980	
Age	Number	Percent	Number	Percent	Number	Percent
Under 5	1,852	9.0	2,541	8.4	689	37.0
5-9	2,192	10.6	2,327	7.7	135	6.2
10-19	3,978	19.2	5,170	17.1	1,192	30.0
20-34	4,178	20.02	8,007	26.5	3,829	91.6
35-54	4,741	22.9	6,275	20.7	1,534	32.4
55-64	1,778	8.6	2,686	8.9	908	51.1
65+	1,953	9.5	3,229	10.7	1,271	64.9
TOTALS	20,677		30,235		9,558	46.2

[1]1970 Census
[2]1980 Census

TABLE 17-3

1980 Persons by Race/Ethnicity

Race	Number	Percent
White	24,776	81.9
Black	339	1.1
American Indian	282	.9
Eskimo	1	.003
Aleut	15	.05
Japanese	168	.6
Chinese	88	.3
Filipino	114	.4
Korean	20	.07
Asian Indian	106	.4
Vietnamese	27	.09
Hawaiian	18	.06
Guamanian	4	.01
Samoan	1	.003
Other	4,276	14.1
TOTALS	30,235	

1980 Persons of Spanish Origigin

Origin	Number	Percent
Not of Spanish Origin	23,385	77.3
Mexican	6,082	20.1
Puerto Rican	30	.1
Cuban	18	.06
Other Spanish	720	2.4
TOTALS	30,235	

1980 Persons of Spanish Origin by Race

Race	Number	Percent of Total
White	2,750	40.1
Black	10	.1
American Indian, Eskimo	128	1.9
Other	3,962	57.8
TOTALS	6,850	

17.B POPULATION PROJECTIONS

ASSUMPTIONS

The Land Use Element of the General Plan indicates that there will be a population of approximately 56,000 by the year 2010. This projection is based on California Department of Finance E-150 Series Provisional Projections for Yolo County as modified and adopted by the Sacramento Area Council of Governments (SACOG) in February of 1985. This projection basically assumes an annual growth rate of 2.03 to 2.06% for the City of Woodland using 1980 as a base year for these estimates. Table 17-4 below summarizes the projections from April 1, 1980 through July 1, 2010.

TABLE 17-4

1984 Population Projection for the City of Woodland[1]

	County[3]			City		
	Internal	Population	% Change	Population	% Change	Annual Growth Rate
1980 (4/1/80)	3-3/4 yrs	113,374	5.2	30,235	7.3	2.03
1984 (1/1/84)	1-1/2 yrs	119,600	2.0	32,600	3.0	2.03
1985[2]	5 yrs	122,002	7.4	33,597	9.7	2.06
1990	5 yrs	131,693	6.6	37,203	9.7	2.06
1995	5 yrs	141,012	5.8	41,197	9.7	2.06
2000	5 yrs	149,689	5.0	45,619	9.7	2.06
2005	5 yrs	157,505	4.4	50,515	9.7	2.06
2010		164,815		55,937		

[1]1980 Census, State of California, Department of Finance, SACOG.
[2]1985-2010 are July 1 figures.
[3]County Population Projection is less than Department of Finance estimate.

Various Growth Rates

Table 17-5 illustrates the growth rates at different percentage levels with the subsequent population increases.

TABLE 17-5

POPULATION PROJECTIONS

State Department of Finance January 1, 1988 Population Estimate = 36,941

Year	Annual Growth Rate							
	2%	2.5%	3%	3.5%	4%	4.5%	5%	5.5%
1988	36,941							
1989	37,680	37,865	38,049	38,234	38,419	38,603	38,788	38,973
1990	38,433	38,811	39,191	39,572	39,955	40,340	40,728	41,116
1991	39,202	39,781	40,366	40,957	41,554	42,156	42,764	43,378
1992	39,986	40,776	41,577	42,391	43,216	44,053	44,902	45,763
1993	40,786	41,795	42,825	43,874	44,944	46,035	47,147	48,280
1994	41,602	42,840	44,109	45,410	46,742	48,107	49,504	50,936
1995	42,434	43,911	45,433	46,999	48,612	50,272	51,980	53,737
1996	43,282	45,009	46,796	48,644	50,556	52,534	54,579	56,693
1997	44,148	46,134	48,200	50,347	52,579	54,898	57,308	59,811
1998	45,031	47,288	49,646	52,109	54,682	57,368	60,173	63,101
1999	45,931	48,470	51,135	53,933	56,869	59,950	63,182	66,571
2000	46,850	49,682	52,669	55,820	59,144	62,648	66,341	70,232
2001	47,787	50,924	54,249	57,774	61,509	65,467	69,568	74,095
2002	48,743	52,197	55,877	59,796	63,970	68,413	73,141	78,171
2003	49,718	53,502	57,553	61,889	66,529	71,491	76,798	82,470
2004	50,712	54,839	59,279	64,055	69,190	74,708	80,638	87,006
2005	51,726	56,210	61,058	66,297	71,957	78,070	84,669	91,791
2006	52,761	57,615	62,890	68,617	74,836	81,583	88,903	96,840
2007	53,816	59,056	64,776	71,019	77,829	85,255	93,348	102,166
2008	54,892	60,532	66,719	73,505	80,942	89,091	98,015	107,785

A short term (1983-1990) projection of new households for the City of Woodland has been made by the Sacramento Area Council of Governments (SACOG). This population projection is a component of the October 1984, "Regional Housing Needs Allocation Plan". The plan is required by State Housing Law and must be used for planning purposes as the estimated number of new households by income group from 1983 to 1990. The projected households by income category translates into the annual number of housing units needed to meet local housing needs including the jurisdiction's allocation (or share) of the region's housing needs. The formulas used by SACOG in developing the housing needs allocations are intended to assure that all jurisdictions plan for an appropriate level of housing production for all income groups. This is part of a statewide effort to have cities and counties share in meeting the projected housing needs of all income groups and not have housing shortages develop over time due to local government policies and practices, economic forces and housing market activity. The 1983-1990 projection of households is found in Table 17-6 below.

TABLE 17-6

1984 SACOG REGIONAL HOUSING NEEDS ALLOCATION PLAN (WOODLAND)

INCOME CATEGORY	JAN. 1, 83 HOUSEHOLDS	% 1983 TOTAL	JULY 1, 90 HOUSEHOLDS	% 1990 TOTAL	1983-1990 HOUSEHOLD INCREASE	% OF HOUSEHOLD INCREASE
Very Low[1]	3,052	27.3	3,966	28.5	914	33.7
Low[2]	2,023	18.1	2,570	18.5	547	20.1
Moderate[3]	2,560	22.9	3,071	22.1	511	18.8
Above Moderate[4]	3,543	31.7	4,287	30.9	744	27.4
TOTALS	11,178	100.0	13,894	100.0	2,716	100.0

[1]Very Low: 0-50% of median family income
[2]Low: 51-80% of median family income
[3]Moderate: 81-120%of median family income
[4]Above Moderate: Above 120% of median family income

17.C EMPLOYMENT

The 1980 Census indicated that Woodland had a labor force of 14,557 persons (civilians 16 years old and over who were either at work, with a job but not a work, or unemployed). Out of the labor force 13,022 persons were employed and 1,535 persons or 10.5% were unemployed. Table 17-7 indicates employment by industry for Woodland from the 1980 Census. The five largest employers by industry are (1) retail trade (17.6%), (2) education services (10.1%), (3) health services (8.6%), (4) agriculture and non-durable good-manufacturing (7.89%) (tie for 4th largest) and (5) public administration (government) (7.6%).

TABLE 17-7

EMPLOYMENT BY INDUSTRY

Industry	Persons Employed	Percent of Total
Agriculture, Forestry, Fisheries and Mining	1,020	7.8
Construction	664	5.1
Non Durable Goods Mfg.	1,015	7.8
Durable Goods Mfg.	759	5.8
Transportation	608	4.7
Communications & Other Public Utilities	356	2.7
Wholesale Trade	682	5.2
Retail Trade	2,294	17.6
Finance, Insurance, Real Estate	780	6.0
Business & Repair Services	514	4.0
Personal, Entertainment, Recreations Services	375	2.9
Health Services	1,113	8.6
Education Services	1,312	10.1
Other Professional & Related Services	535	4.1
Public Administration	995	7.6
TOTALS	13,022	100.0

Table 17-8 indicates the occupations of employed persons 16 and over from the 1980 Census.

TABLE 17-8

1980 OCCUPATIONS OF EMPLOYED MEMBERS OF LABOR FORCE

Occupation	Number	Percent
Executive, Administrative, Managerial	1,394	10.7
Professional Specialty	1,343	10.3
Technicians & Related Support	351	2.7
Sales	1,352	10.4
Administrative Support, Including Clerical	2,397	18.4
Private Household	48	0.4
Protective Service	269	2.1
Service, Except Protective & Household	1,511	11.6
Farming, Forestry & Fishing	786	6.0
Precision Production, Craft & Repair Services	1,682	13.9
Machine Operators, Assemblers & Inspectors	803	6.2
Transportation & Material Moving	645	4.9
Handlers, Equipment Cleaners, Helpers & Laborers	441	3.4
TOTAL	13,022	100.0

Table 17-9 taken from the 1980 Census indicates the geographic area of employment of principal wage earners living in Woodland. Woodland provides most of the employment for its residents while most others work in Davis or the remainder of Yolo County.

TABLE 17-9

1980 PLACE OF EMPLOYMENT		
Area	Number	Percent
A. Inside Sacramento SMSA (Yolo, Sacramento, Placer Counties)		
Woodland	7,813	62.8
Davis	847	6.8
Remainder Yolo County	1,524	12.2
Sacramento City	727	5.8
Remainder Sacramento County	248	2.0
Placer County	50	0.4
Subtotal	11,209	
B. Outside Sacramento SMSA		
Fairfield	41	0.3
Vacaville	21	0.2
Remainder Solano County	112	0.9
Stockton SMSA	13	0.1
Oakland	18	0.1
Remainder San Francisco-Oakland SMSA	24	0.2
Worked elsewhere	195	1.6
Subtotal	424	
Place of work not reported	809	6.5
TOTAL	12,432	100.0%

Yolo County ranks as one of the nation's leading agricultural counties with a gross total value of agricultural products of $171,517,000 in 1986. A large number of jobs in Woodland are directly or indirectly related to the production or processing of farm products. Of the largest manufacturing employers in the Woodland area 3 are food processors, 1 manufactures grain trailers, 1 manufactures irrigation couplers and fittings and 1 manufactures grain and rice dryers. Other leading manufacturing employers include 4 mobile home plants and a plastics plant. Altogether there are 56 manufacturing plants in the Woodland area. The largest non manufacturing employers include Yolo County, the Woodland Joint Unified School District, Woodland Memorial Hospital and the Woodland Clinic. Table 17-10 and 17-11 list the major employers in the Woodland area and in Yolo County in 1987.

Economic growth during the past 5 years has occurred mainly in the areas of wholesale trade (6 large distribution centers) and retail trade (new stores, restaurants, motel, 3 shopping centers and a regional shopping mall). Growth in manufacturing and services has been more limited. Numerous small service and manufacturing businesses have also located in Woodland.

Employment in Yolo County for the 1972 to 1986 period is presented in Table 17-12. About 8,500 new jobs were generated during this period with an overall rate of increase of 2.1% per year. The largest numerical increases occurred in retail trade, services, wholesale trade, and government which added 2,200, 2,000, 1,900 and 1,600 jobs respectively. Government and trade are by far the largest industrial sectors followed by services, agriculture and manufacturing. There was an overall decline in agricultural jobs from 1979 to 1986.

Table 17-12 also indicates the short term outlook for employment by industry for 1987-1988. Wage and salary employment in Yolo County is expected to increase by 2,300 jobs during 1987-1988 with the largest gains in retail and wholesale trade, services, government and construction. Only marginal increases, if any, are expected in the remaining sectors. Job growth during the two year forecast period will result largely from a stronger demand for housing, retail trade and wholesale distribution activities and moderate increases in demand for consumer goods and services, eating and drinking places, food stores, general merchandise stores and specialty retail trade activities.

TABLE 17-10

MAJOR EMPLOYERS IN THE WOODLAND AREA 1987

A. Manufacturing and Distribution

Name of Company	Employment	Products
Carnation Co. (Contadina Division)	125-725 Peak	Tomato Products
Spreckels Sugar Company (Amstar Div.)	300	Beet Sugar Products
Payless Distribution Center	300	Distribution Center
Mobil Chemical Company	285	Plastic Packaging Products
A. Teichert & Sons	250	Engineer & Contractor Supplies
R.C. Collet	200	Engineer & Contractor Supplies
Fleetwood Homes of N. California	200	Mobile Homes
Bayshore Homes of California	118	Mobile Homes
Silvercrest	100	Mobile Homes
Pacific International Rice Mills	70-130	Rice Mill
Utilmaster	75-100	Van Conversions/Delivery Vehicles
Ames	100	Irrigation Couplers, Fittings
Skyline Homes	82	Mobile Homes
Carlon	75	Plastic Conduits
Coen Company	75	Combustion Engineers
Cotter and Company (True Value)	70	Distribution Center
WESCO	65	Grain Trailers
Gayle Manufacturing	60	Grain and Rice Dryers
Radio Shack (Tandy Corp.)	60	Distribution Center
Discovery Distribution Systems, Inc.	60	Distribution Center
Crain Products	51	Carpet Cushions
Coastland Forest Products	50	Lumber Wholesale & Truss Mfg.
Johnson Farm Machinery	50	Farm Machinery - Tomato Harvester
B. Non-Manufacturing Employment		
County of Yolo	1,270	County Government
Woodland Memorial Hospital	550	Community Hospital
Woodland Clinic Medical Group	315	Medical Clinic
City of Woodland	220	City Government
Pacific Gas and Electric Co.	110	Utility Company
Daily Democrat	72	Daily Newspaper
C. Retail		
County Fair Mall	875	
Mervyn's 130		
Penney's 75		
Gottschalk's 120		
Target 175		
Mall Shops 375		
Raley's Super Store (Westgate Center)	110	
K-mart Shopping Center	200	

TABLE 17-11

MAJOR EMPLOYERS IN YOLO COUNTY 1982[1]

A. Manufacturing and Distribution

Name of Company	Employment	Products	Location
Hunt-Wesson Foods Inc.	150-2000	Tomato Products	Davis
American Home Food Products	500 (peak)	Canned Vegetables and fruits	Winters
Mariani Nut Company	316 (peak)	Nut Proces. Plant	Winters
Rice Growers Association of California	380	Rice Mill	W. Sacramento
Farmer's Rice Growers Co-op	100	Rice Mill	W. Sacramento

B. Non-Manufacturing

Name of Company	Employment	Products	Location
University of Calif.	7,648 (full-time)	Education/Research	Davis
Port of Sacramento	300	Sea Port & Terminal	East Yolo

[1]Yolo County Chamber of Commerce

TABLE 17-12

WAGE AND SALARY EMPLOYMENT BY INDUSTRY
IN YOLO COUNTY 1979-1986[1]

(Amounts in Thousands)

Industries	1979	1980	1981	1982	1983	1984	1985	1986	Numerical Increase 79-86	Ave. Annual Growth Rate 79-86	2-Year Forecast 87-88: Year 1987	1988	Numerical Increase 87-88
Agriculture[2]	5.6	5.1	5.4	5.5	4.2	4.8	4.6	4.5	-1.1	Decline	4.4	4.5	.1
Mining	.1	.2	.2	.3	.3	.2	.4	.4	.3	14.7	.4	.4	0
Construction	2.0	1.7	1.5	1.3	1.3	1.8	1.9	2.0	0	0	2.1	2.3	.2
Manufacturing	5.0	4.8	4.8	4.7	4.5	5.1	4.9	5.1	.1	.25	5.2	5.3	.1
Transportatin & Public Utilities	2.7	2.7	2.8	2.9	2.8	3.1	3.1	3.3	.6	2.5	3.3	3.4	.1
Wholesale Trade	1.8	2.1	2.3	2.5	3.0	3.3	3.5	3.7	1.9	9.4	4.1	4.6	.5
Retail Trade	6.1	6.7	6.7	6.5	6.8	7.4	8.1	8.3	2.2	3.9	8.9	9.5	.6
Finance, Insurance & Real Estate	1.3	1.4	1.6	1.4	1.4	1.5	1.5	1.9	.6	4.9	2.0	2.1	.1
Services	4.9	4.6	5.2	5.3	5.71	6.0	6.5	6.9	2.0	4.4	7.1	7.4	.3
Government													
Federal	.5	.6	.6	.6	.6	.6	.6	.6	.1	2.3	.6	.6	0
County	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	.1	.9	See Below		
City	.7	.7	.8	.8	.8	.8	.8	.8	.1	1.7	See Below		
Other[3]	15.0	14.7	14.8	14.8	15.5	15.4	16.0	16.6	1.6	1.3	See Below		
State & Local[4]											19.3	19.6	
TOTAL	47.0	46.7	48.1	49.4	48.2	51.4	53.3	55.5	8.5	2.1	57.4	59.7	2.3

[1]Does not include proprietors, the self-employed, unpaid volunteer or family workers, domestic workers in households and persons in labor management trade disputes. Years represented are calendar years.
[2]Employment reported by place of work. Does not include farmers and unpaid family workers.
[3]Includes employees of the State, special districts and public schools.
[4]Combines County, City, other in two-year forecast (   ).

Source: State of California Employment Development Department.

17.0 POPULATION

SOURCE

1. Woodland General Plan 1987, Housing Element

Housing

18. HOUSING

THE CHARACTERISTICS OF HOUSING, HOUSEHOLD, AND THE HOUSING MARKET

The following information was compiled from the Woodland General Plan. The following topics are covered under the characteristic headings.

A. HOUSEHOLD CHARACTERISTICS

1. Definition of Terms

Most of the information about households in this Section is from the 1980 Census. In order to understand this information it will be helpful to know the Bureau of the Census definitions of the following terms: A household is defined as the person or persons occupying a housing unit. A householder is the person or one of the persons in whose name the housing unit is owned or rented. The number of households and householders are identical to the number of occupied housing units. A family is defined as two or more persons living together who are related by birth, marriage or adoption. Group quarters are living arrangements such as nursing homes, hospitals, rooming houses or detention facilities which are not households. Unrelated individuals may be householders living alone or with unrelated persons, roomates or boarders unrelated to the householder or a group quarters member who is not an inmate of an institution.

2. Household Growth Trends

On January 1, 1983 there were an estimated 11,178 households in Woodland with an average of 2.78 persons per household. Table 18-1 indicates growth trends for households and group quarters.

TABLE 18-1

1987 HOUSEHOLD AND GROUP QUARTERS POPULATION AND GROWTH TRENDS

	1970[1]	1975[2]	1980[3]	1983[4]	1985[4]	1988[5]
Total Population	20,677	25,389	30,235	31,926	33,125	36,941
Group Quarters Population	470	604	773	870	899	848
Household Population	20,207	24,785	29,462	31,056	32,226	36,093
Households	6,533	8,737	10,740	11,178	11,730	13,418
Persons Per Household	3.10	2.84	2.74	2.78	2.75	2.69

[1]1970 Census
[2]1975 Special Census
[3]1980 Census 100% Count
[4]January 1, 1985 California Department of Finance Estimate
[5]January 1, 1988 California Department of Finance Estimate

From 1970 to 1980, the number of households increased by 4,207 which represents a 64.4% increase for the decade. During the same time frame, the total population increased by 46%. The average household size (persons per household) declined by 0.36 from 1970 to 1980. The 1988 estimate from the California Department of Finance showed a minor decrease in persons per household (2.69).

3. Household Composition

Tables 18-2 and 18-3 provide 1980 Census information on household types and household types by persons 65 years of age and over. In 1980 there were 10,740 households in Woodland of which 7,913 were family households (families). Of these households there were 2,320 one person households (21.6%), 6,624 married couple families (61.7%), 1,289 families of two or more persons but with no wife or husband (12%) and 507 non-family households with two or more persons (4.7).

In 1980 there were 3,229 persons in Woodland who were 65 years of age and over. This group constituted 10.7% of the total population. Twenty percent (20%) of all households have persons 65 years of age and over and 38.9% of all one person households have persons who are 65 years of age and over. Of the 3,229 persons 65 years of age and over 1,792 persons (55.5%) resided in family households (lived in a household with two or more related persons), 959 persons (29.7% resided in non-family households (lived alone or only with persons not related) and 478 persons (14.8%) resided in group quarters.

Eighty-six (86) percent of the 1980 total population of 30,235 persons were living in family households, 11.5% lived in non-family households and 2.6% lived in group quarters.

4. Household by Race

Tables 18-4 and 18-5 identify households by race and the percentage of renter households by race and by Spanish Origin from the 1980 Census. Householders in Woodland were predominantly white (85.6%). Other householders by race were as follows: Other (10.8%), Asian and Pacific Islander (1.6%), Black (1.1%) and American Indian, Eskimo and Aleut (0.85%). Householders of Spanish origin (1,846 persons) constituted 17.2% of total households. The percentage of renter households within each racial category is as follows: Other Races (57.4%), Black (54.6%), American Indian, Eskimo and Aleut (49.4%), White (35.9%) and Asian and Pacific Islander (30.1%). The perentage of renter households of Spanish origin was 52.8%.

5. Household Income

Table 18-6 outlines the 1979 household incomes for Woodland from the 1980 Census. The 1979 median household income was $18,280 while the 1979 median family income was $21,513. The 1979 median income of unrelated individuals was $7,777.

The 1975 Special Census indicated a median household income of $11,304. From 1975 to 1979 the median household income of Woodlanders increased by $6,976 or 61.2%.

TABLE 18-2

1980 HOUSEHOLD TYPES AND HOUSEHOLD TYPES BY PERSONS 60+ AND 65+

HOUSEHOLD TYPE	NUMBER	PERCENT OF TOTAL HOUSEHOLDS
1 PERSON:		
Male	953	21.6
Female	1,367	
2+ PERSONS:		
Married-Couple Family	6,624	61.7
Other Family: Male Householder	267	12.0
Female Householder	1,022	
Non-Family: Male Householder	335	4.7
Female Householder	172	
TOTAL	10,740	

HOUSEHOLD TYPE	W/PERSONS 60+		W/PERSONS 65+	
	Number	Percent by Household Type	Number	Percent by Household Type
1 PERSON:	1,088	46.9	897	38.9
2+ PERSONS				
Family	1,708	21.6	1,204	15.2
Non-Family	51	10.1	41	8.1
TOTAL	2,847		2,142	

TABLE 18-3

1980 HOUSEHOLD TYPES BY TOTAL POPULATION AND PERSONS 65+					
	ALL PERSONS		PERSONS 65+		
HOUSEHOLD TYPE AND RELATIONSHIP	NUMBER	PERCENT	NUMBER	PERCENT ALL PERSONS	PERCENT PERSONS 65+
FAMILY HOUSEHOLD					
Householder	7,913	26.2	980	3.2	30.4
Spouse	6,624	21.9	623	2.1	19.3
Other Relative	11,108	36.7	175	.6	5.4
Nonrelative	367	1.2	14	.05	.4
NONFAMILY					
Male Householder	1,288	4.3	181	.6	5.6
Female Householder	1,539	5.1	751	2.5	23.3
Nonrelative	623	2.1	27	.1	.8
GROUP QUARTERS					
Inmate of Institution	743	2.5	466	1.5	14.4
Other	30		12	.04	.4
TOTALS	30,235		3,229	10.7	
TOTAL FAMILIES			7,913		
TOTAL HOUSEHOLDS			10,740		

TABLE 18-4

1980 RACE OF HOUSEHOLDER BY TENURE						
	TOTAL		RENTERS		OWNERS	
RACE	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
White	9,193	85.6	3,303	30.8	5,890	54.84
Black	119	1.1	65	0.6	54	.5
American Indian, Eskimo, and Aleut	91	0.85	45	0.42	46	.43
Asian and Pacific Islander	176	1.6	53	0.5	123	1.14
Other	1,161	10.8	666	6.2	495	4.61
TOTALS	10,740		4,132	38.5	6,608	61.52

TABLE 18-5

1980 PERCENT RENTER HOUSEHOLDS BY RACE/SPANISH ORIGIN			
RACE	TOTAL HOUSEHOLDS NUMBER	TOTAL RENTER HOUSEHOLDS	PERCENT RENTERS BY RACE
White	9,193	3,303	35.9
Black	119	65	54.6
American Indian, Eskimo, Aleut	91	45	49.4
Asian and Pacific Islander	176	53	30.1
Other	1,161	666	57.4
TOTALS	10,740	4,132	
Spanish Origin Households	1,846	974	52.8

TABLE 18-6

1979 HOUSEHOLD INCOME		
AMOUNT	NUMBER OF HOUSEHOLDS	PERCENT
$ 0 - 2,499	368	3.43
2,500 - 4,999	854	7.95
5,000 - 7,499	776	7.23
7,500 - 9,999	798	7.43
10,000 - 12,499	778	7.25
12,500 - 14,999	717	6.68
15,000 - 17,499	858	7.99
17,500 - 19,999	698	6.50
20,000 - 22,499	840	7.82
22,500 - 24,999	634	5.90
25,000 - 27,499	645	6.01
27,500 - 29,999	555	5.17
30,000 - 34,999	683	6.36
35,000 - 39,999	542	5.05
40,000 - 49,999	495	4.61
50,000 - 74,999	263	2.45
75,000 or more	233	2.17
TOTAL	10,737	

The California Department of Housing and Community Development categorizes income by four income groups. These groups are defined as follows:

Very Low:	0-50% of County Median Income[1]
Low:	51-80% of County Median Income
Moderate:	81-120% of County Median Income
Above Moderate:	Above 120% of County Median Income

[1]Median Family Income in all instances.

Table 18-7 shows the 1979 distribution of household incomes for Woodland using the above income groups and the 1979 Yolo County Median Family income of $20,495.

TABLE 18-7

1979 DISTRIBUTION OF HOUSEHOLD INCOME				
INCOME GROUP		INCOME RANGE	NUMBER OF HOUSEHOLDS	PERCENT OF HOUSEHOLDS
Very Low	(0-50%)	0-10,350	2,905	27.1
Low	(51-80%)	10,351-16,498	1,900	17.7
Moderate	(81-120%)	16,499-24,696	2,439	22.7
Above Moderate	(Above 120%)	24,697 +	3,493	32.5
TOTAL			10,737	

6. Poverty Status

The 1980 Census determined the extent of poverty among Woodland residents. Poverty status is determined by comparing family and individual incomes to income cutoffs or poverty thresholds established by the Bureau of the Census. The size of the family and number of related children under 18 years of age also influence the poverty threshold. For reference purposes a copy of the Bureau of the Census poverty threshold table is located in the Appendix. Table 18-8 indicates the 1980 poverty status of the total population by age. Ninety-two (92%) percent of the total population was above poverty while 8.3 percent of the total population was below poverty. The bulk of the below poverty persons were in the 0-54 age group (6.8%). Persons 60 years of age and over made up 1.2% of those below poverty.

TABLE 18-8

1980 POVERTY STATUS BY AGE[1]				
AGE	ABOVE POVERTY		BELOW POVERTY	
	Number	Percent	Number	Percent
0-54	21,905	74.50	2,007	6.83
55-59	1,548	5.26	68	.23
60-64	996	3.39	114	.39
65 +	2,525	8.59	238	.81
TOTALS	26,974	91.74	2,427	8.26

[1] All tabulations of poverty status exclude inmates of institutions, members of armed forces living in barracks or on ships and unrelated individuals under 15 years.

The 8.26% poverty figure is relatively low compared to other jurisdictions in the Sacramento Region and is the lowest of the three cities in Yolo County. Winters has a 11.2% poverty level while Davis has the highest at 25.1%. The Davis figure is apparently high because of its U.C. Davis student population.

Table 18-9 indicates poverty status by race/ethnicity. The 1980 Census combined 15 racial classifications into five major groups for the analysis of poverty status. Persons of Spanish Origin is another major category of persons measured for poverty status. As noted earlier, the Spanish origin category may include a variety of races. The three racial/ ethnic groups with the highest percentage of persons below poverty were "Other" (20.3%), "Spanish Origin" (15.6%) and "American Indian, Eskimo, and Aleut" (8.5%). The three racial/ethnic groups with the highest number of persons above poverty were "Asian and Pacific Islander" (96.4%), "Black" (94.6%) and "White" (93.6%). The two racial/ethnic groups with the highest number of persons below poverty, "Other" and "Spanish Origin", still had 80% and 84% respectively of their numbers above poverty.

Table 18-10 indicates poverty status by family and age of householder from the 1980 Census. The majority of families in Woodland (89.4%) are 125% of poverty or above, 6.9% are below poverty and 3.7% are between 100 and 124% of poverty. Out of 988 families with householders 65 years of age and older 877 (88.8%) are 125% of poverty or above, 45 (4.6%) are between 100 and 124% of poverty and 66 (6.7%) are below poverty. Families with householders 65 years of age and above make up 12.5% of all families.

TABLE 18-9

1980 POVERTY STATUS BY RACE/ETHNICITY							
		Above Poverty			Below Poverty		
Race/ Ethnicity	Total Population	Number	Percent Total Pop.	Percent by Race/ Ethnicity	Number	Percent Total Pop.	Percent by Race/ Ethnicity
White	23,912	22,380	76.12	93.6	1,532	5.20	6.4
Black	333	315	1.07	94.6	18	.06	5.4
Amer. Indian, Eskimo, Aleut	401	367	1.25	91.5	34	.12	8.5
Asian & Pacific Islander	724	698	2.37	96.4	26	.09	3.6
Other	4,031	3,214	10.93	79.7	817	2.80	20.3
Total	29,401	26,974	91.74	—	2,427	8.27	—
Spanish Origin[1]	6,749	5,695	19.4	84.4	1,054	3.6	15.6

[1]Persons of Spanish Origin are included in the five race categories. Spanish Origin is not treated as a racial category by the 1980 Census.

Table 18-11 indicates poverty status by family type and the presence and age of children from the 1980 Census. Families with children make up 57.8% of all families. Out of these families 4,124 (90.4%) are above poverty while 438 (9.6%) are below poverty. Families with no children make up 42.2% of all families. Families with female householders and children and no husbands make up 8.9% of all families. Out of this category of family 472 (67.4%) are above poverty and 228 (32.6%) are below poverty.

TABLE 18-10

1980 POVERTY STATUS BY FAMILY AND AGE OF HOUSEHOLDER

POVERTY STATUS AND AGE OF HOUSEHOLDERS	FAMILIES		NON FAMILIES	
	Number	Percent	Number	Percent
Below Poverty				
Householder 15-64	481	6.1	265	9.3
Householder 65+	66	0.8	129	4.5
Between 100 & 124% of Poverty				
Householder 15-64	244	3.1	98	3.5
Householder 65+	45	0.6	241	8.5
125% of Poverty & Above				
Householder 15-64	6,184	78.3	1,497	52.7
Householder 65+	877		610	21.5
TOTALS	7,897		2,840	

7. Household Type And Presence Of Children

Table 18-12 identifies the types of households in Woodland and the presence of children. This information indicates the types of living arrangements that exist for children in the community and potential special housing needs.

8. Handicapped And Disabled

Table 18-13 indicates work and public transportation disabilities for Woodlanders from the 1980 Census. A disability is defined as a health condition of a non-institutionalized person which limits the kind or amount of work that can be done or prevents working at all. A public transportation disability is a health condition which makes it difficult or impossible to use public transportation.

TABLE 18-11

1980 POVERTY STATUS BY FAMILY TYPE, PRESENCE AND AGE OF CHILDREN				
POVERTY STATUS	TOTAL FAMILIES		FAMILIES W/FEMALE HOUSEHOLDER AND NO HUSBAND	
	Number	Percent	Number	Percent
Above Poverty				
Children 0-5 & 6-17	807	10.2	50	0.6
Children 0-5 only	1,008	12.8	73	0.9
Children 6-17 only	2,309	29.2	349	4.4
No Children	3,226	40.8	197	2.5
TOTALS	7,350	93.0	669	8.4
Below Poverty				
Children 0-5 & 6-17	91	1.2	31	0.4
Children 0-5 only	194	2.5	89	1.1
Children 6-17 only	153	1.9	108	1.4
No Children	109	1.4	21	0.3
TOTALS	547	7.0	249	3.2
Total All Families	7,897			

TABLE 18-12

1980 HOUSEHOLD TYPE AND PRESENCE OF CHILDREN		
	Total	Spanish Origin
Married Couple With Children	3,579	900
Married Couple Without Children	3,129	332
Male Householder, No Spouse, With Children	166	53
Male Householder, No Spouse, Without Children	105	39
Female Householder, No Spouse, With Children	640	212
Female Householder, No Spouse, Without Children	278	44
Non-Family Household	2,840	253
TOTALS	10,737	1,833

Source 1980 Census 6% Sample

TABLE 18-13

1980 WORK AND PUBLIC TRANSPORTATION DISABILITY

WORK DISABILITY	
With Work Disability:	
In Labor Force	545
Not In Labor Force:	
Prevented From Working	663
Not Prevented	205
No Work Disability	17,555
PUBLIC TRANSPORTATION DISABILITY	
16 - 64:	
With A Public Transportation Disability	220
No Public Transportation Disability	18,748
65+:	
With A Public Transportation Disability	351
No Public Transportation Disability	2,412

There were 1,413 persons with work disabilities in 1980. Of this group 545 (38.6%) persons were in the labor force while 868 (61.4%) were not in the labor force. Of the 868 persons not in the labor force in 1980, 663 (76.4%) were prevented from working.

B. HOUSING CHARACTERISTICS

1. Total Housing Units And Construction Trends

The January 1, 1987 California Department of Finance estimate of housing units for the City of Woodland indicated a total of 13,085 units. The 1980 Census indicated a housing count of 11,239 units which was a 64.2% increase over the 1970 housing count of 6,846 units. During the decade of the seventies the City averaged 439 new units per year or an average annual unit increase of 5.1%. From January 1, 1980 to August 31, 1987 there were an estimated 2,924 units finaled which represents an average of 381 new units per year or an average annual unit increase of 3.1% over 7.67 years. There was a decline in construction activity from 1980-1982 as a result of the recession and its impact on the local housing market. Recent building permit activity, however, indicates an improved housing market. Calendar year 1986 was the highest year to date for residential permits with permits issued for a total of 923 units of all types. Table 18-14 indicates total housing units and construction trends.

TABLE 18-14

1987 HOUSING UNITS AND CONSTRUCTION TRENDS

	1970[1]	1975[2]	1980[3]	1985[4]	1987[5]
Total Housing Units	6,846	19,183	11,239	12,211	14,041
Occupied	6,533	8,737	10,740	11,730	13,418
Vacant	313	446	499	481	623
% Vacant	4.5	4.8	4.4	3.9	4.4

[1]1970 Census
[2]1975 Special Census
[3]1980 Census
[4]January 1, 1985 California Department of Finance Estimate
[5]January 1, 1988 California Department of Finance Estimate

2. Type Of Units

The 1980 Census indicated that the City of Woodland's housing stock is predominately single family housing (68.9%), with duplexes and multiple family (3+) units making up 26.7%. Of the 627 single family attached units there were 204 condominium units. Mobile homes make up the remainder of the City's housing stock (4.3%). Building permit records indicate that since the 1980 Census (April 1980 to August 31, 1987) there has been an increase in the percentage of multipe family housing units built of single family units versus multiple family housing. No additional mobile home parks have been approved since the 1980 Census. Tables 18-15 and 18-16 indicate the types of units in April of 1980 and the types of units constructed from January, 1980 through August 31, 1987. Table 18-17 indicates the types of units in August of 1987 (63.7% single family, 32.8% multiple family and 3.4% mobile home units.

TABLE 18-15

1980 TYPE OF UNITS				
	TOTAL	PERCENT	TOTAL OCCUPIED	RENTER OCCUPIED BY TYPE
Single Family Detached	7,119	63.3	6,946	1,167
Single Family Attached	627	5.6	596	428
Duplex	432	3.8	408	305
3 - 4	474	4.2	432	408
Multi-Family 5+ Units	2,100	18.7	1,877	1,765
Mobile Home	487	4.3	481	59
TOTALS	11,239		10,740	4,132

Source: 1980 Census

TABLE 18-16

TYPE UNITS CONSTRUCTED (FINALED) JANUARY 1, 1980 TO AUGUST 31, 1987			
	TOTAL	PERCENT	AGGREGATE PERCENT
Single Family Detached	1,041	35.6	
Single Family Attached (Split lot duplex, condo)	237	8.1	43.7
Duplex	37	1.3	
3 - 4	36	1.2	56.3
Multi-Family 5+ Units	1,573	53.8	
TOTAL	2,924		

Source: Building Inspection Division Building Permit Records

TABLE 18-17

HOUSING STOCK BY TYPE AUGUST 1987			
	TOTAL	PERCENT	AGGREGATE PERCENT
Single Family Detached	8,160	57.6	
Single Family Attached	864	6.1	63.7
Duplex	469	3.3	
3 - 4	510	3.6	
Multi-Family 5+ Units	3,673	25.9	32.8
Mobile Home	487	3.4	3.4
TOTAL	14,163		

Source: 1980 Census and Building Inspection Division Building Permit Records.

3. Tenure And Vacancy Rates

The 1980 Census indicated that 61.5% of Woodland's housing stock is owner occupied while 38.5% is renter occupied. These figures are similar to the 1975 Special Census figures for tenure which indicated 66% owners, 33% renters and 1% other. Table 18-18 indicates 1980 tenure and vacancy rates. Recent construction trends indicate that this tenure ratio is slowly changing to more rental housing stock. As Table 18-16 indicates, there were more multiple units constructed from 1980 to 1987 than single family units.

It is generally accepted that the desired vacancy rate is 2% for owner units and 6% for renter units in order to provide for normal turnover in housing units. The 1980 Census indicated that the overall vacancy rate for available units was 3.06%. The actual vacancy rate for owner occupied housing was 2.06% and 4.62% for rental housing.

Vacancy rates in the City of Woodland have fluctuated considerably since 1980. The California Department of Finance estimates for the years 1981-1987 indicated an overall vacancy rate for Woodland ranging from 2.2% (January 1, 1986) to 4.9% (January 1, 1983). The overall vacancy rate on January 1, 1987 was 3.6%. These rates generally indicate that the housing market is in balance with consumer demand and that there is an adequate supply of total units.

City of Woodland vacancy surveys for rental housing have indicated a wide range of vacancy rates for most types of rental units since 1980. A 1982 survey indicated that apartment complexes of 4 or more units had an overall vacancy rate of 2%. This survey also indicated that one bedroom units had a vacancy rate of 1.5% and that three and four bedroom units had a zero vacancy rate. A 1986 survey (which followed a dramatic increase in apartment construction) indicated a 13% vacancy rate. The vacancy rates by number of bedrooms again showed considerable variation. The 1986 survey indicated

higher vacancies for two bedroom units (20%) and one bedroom units (9%) and lower vacancy rates for studio units (3.4%) and three bedroom units (6%). A follow-up survey of nine recently constructed apartment projects in July of 1987 indicated a 39% vacancy rate for those units. The estimated vacancy rate for all other apartments in July of 1987 was 6.9%. Local realtors have indicated that the vacancy rates for single family rentals, duplexes and other low density housing has historically been extemely low (0-1%).

The vacancy rate for owner occupied units in July of 1987 is estimated to range from 1 to 2%. Local realtors and developers have also indicated that both new and used homes are selling after approximately 30-60 days on the market and that many new homes currently are being sold prior to completion.

TABLE 18-18

1980 TENURE AND VACANCY RATES

TENURE	OCCUPIED UNITS	PERCENTAGE	VACANT AVAILABLE (FOR SALE OR RENT)	VACANCY RATE
Owner	6,608	61.5	139	2.06
Renter	4,132	38.5	200	4.62
TOTAL	10,740	100.0	339	3.06

VACANT HOUSING UNITS

For Sale Only	139
For Rent	200
Held For Occasional Use	6
Other Vacant	154
TOTAL	499

CONDOMINIUM TENURE & VACANCY

Total Condominiums	204
Renter Occupied	83
Vacant For Sale Only	1
Other Vacant	7

4. Unit Value

Table 18-19 indicates the 1980 Census unit values of select owner occupied housing units (excludes condominiums and mobile homes). In 1980 approximately three-fourths (77.5%) of all the select owner occupied units were in the

$40,000 to $99,999 range while exactly 50% of the units were in the $50,000 to $79,999 range. The mean value of all the units in this category of housing was $70,841. These figures provide an estimate of the 1980 values of single family housing in Woodland.

TABLE 18-19

1980 ESTIMATED VALUE OF OWNER OCCUPIED UNITS[1]

ESTIMATED VALUE	NUMBER	PERCENT
Less than $10,000	19	0.3
$10,000 to 14,999	40	0.7
15,000 to 19,999	43	0.8
20,000 to 24,999	91	1.6
25,000 to 29,999	76	1.3
30,000 to 34,999	137	2.4
35,000 to 39,999	173	3.0
40,000 to 49,999	725	12.8
50,000 to 79,999	2,825	49.9
80,000 to 99,999	841	14.8
100,000 to 149,000	548	9.7
150,000 to 199,999	98	1.7
200,000 or more	50	0.9
TOTAL	5,666	
Median Value	$66,200	
Mean Value	70,841	

[1]Excludes Condominiums and Mobile Homes

5. Age And Condition Of Housing

The age of the housing stock is an indicator of the condition of housing. Approximately two-thirds (70.5%) of Woodland's housing stock has been constructed since 1960 while approximately one-third (29.4%) was constructed prior to 1960. Overall Woodland's housing stock is fairly new. The City's older housing is generally concentrated in Planning Areas "C" and "H". Table 18-20 summarizes the age of the City's housing stock.

Estimates for the overall condition of housing in Woodland are based on the 1975 Special Census. Census enumerators in 1975 made their evaluation of the condition of housing based on five categories: Sound, deteriorating, under extensive repair, dilapidated and inadequate original construction. Sound units are those which are in good condition and only in need of regular

maintenance. Deteriorating units are those in need of repair beyond regular maintenance. While not listed as sound units, these are considered as units that can be rehabilitated to a sound condition. Units under extensive repair are considered units that can be rehabilitated. Units in the dilapidated and inadequate original construction categories are considered to be in poor or unsound condition and should be replaced.

In 1975 ninety-three (93) percent of the occupied units in the community were in sound condition; five (5) percent needed repairs or rehabilitation; and two (2) percent were unsound. Table 18-21 summarizes the 1975 estimates of the condition of housing in Woodland.

TABLE 18-20

AGE OF HOUSING

YEAR BUILT	TOTAL	PERCENT	TOTAL OCCUPIED	RENTER OCCUPIED	PERCENT RENTER OCCUPIED
1981 - 1987	2,724	19.2	NA	NA	NA
April 1980 - Dec 1980	200	1.4	NA	NA	NA
1979 - March 1980	467	3.3	363	188	4.6
1975 - 1978	1,705	12.0	1,653	641	15.5
1970 - 1974	2,247	15.9	2,123	826	20.0
1960 - 1969	2,642	18.7	2,599	1,040	25.2
1950 - 1959	1,659	11.7	1,609	495	12.0
1940 - 1949	884	6.2	855	345	8.3
1939 or earlier	1,635	11.5	1,538	597	14.4
TOTALS	14,163		10,740	4,132	

Source: 1980 Census and Building Inspection Division
Building Permit Records (January 1, 1980 to August 31, 1987).

Since 1975 a total of 181 units have been rehabilitated through block grant programs and a total of 57 units have been removed from the housing supply. Based on this information it is estimated that as of August 31, 1987 that 278 units (2.0%) need to be rehabilitated and that 127 units (0.9%) should be replaced. This information provides a preliminary indication of the condition of housing in Woodland. Further survey work by trained personnel may be necessary to determine the condition of housing on an individual basis.

Another recognized indicator of the condition of housing is the lack of complete plumbing facilities for exclusive use. Complete plumbing facilities is defined as 1) piped hot and cold water, 2) a flush toilet (non chemical) and 3) a bathtub or shower for exclusive use by household members. All facilities must be in the living quarters. The 1980 Census indicated that out of a total of 11,239 year round housing units, the City of Woodland had 91

units (0.8%) which were lacking complete plumbing for exclusive use. Of these 91 units 70 were occupied and out of the 70 occupied units, 60 were occupied by renters. Table 18-22 summarizes plumbing facilities by tenure and occupancy status. The 1970 Census indicated that out of a total of 6,846 housing units there were 86 units (1.3%) lacking one or more plumbing facilities. Out of the 86 units 65 were occupied (21 were owner units and 44 were renter units).

TABLE 18-21

	1975 CONDITION OF HOUSING		
CATEGORY	ASSESSMENT	PERCENT	UNITS
Sound	Need regular maint. only	93%	8,540
Deteriorating	In need of repair beyond regular maintenance		
		5%	459
Under Extensive Repair	Can be rehabilitated		
Dilapidated	Should be replaced		
		2%	184
Inadequate Original Construction	Should be replaced		
	TOTAL UNITS		9,183

TABLE 18-22

1980 TENURE AND OCCUPANCY STATUS BY PLUMBING FACILITIES			
	TOTAL UNITS	OCCUPIED UNITS	RENTERS
Complete Plumbing For Exclusive Use	11,148	10,670	4,072
Lacking Complete Plumbing For Exclusive Use	91	70	60
TOTALS	11,239	10,740	4,132
Persons in Units Lacking Complete Plumbing Facilities For Exclusive Use TOTAL	172		

6. Persons In Unit

Table 18-23 summarizes the number of persons in occupied housing units by tenure from the 1980 Census. Renter occupied units averaged 2.5 persons per unit while owner occupied units averaged 2.92 persons per unit. The largest percentage of renter occupied units (33.4%) had one person per unit while the largest percentage of owner occupied units (35.3%) had two persons per unit. The City averaged 2.74 persons per occupied unit in 1980.

TABLE 18-23

PERSONS IN OCCUPIED UNITS

PERSONS	TOTAL		RENTERS		OWNERS	
	NUMBER	PERCENT	NUMBER	PERCENT OF TOTAL	NUMBER	PERCENT OF TOTAL
1 Person	2,320	21.6	1,381	12.9	939	8.7
2 Persons	3,473	32.3	1,141	10.6	2,332	21.7
3 Persons	1,823	17.0	664	6.2	1,159	10.8
4 Persons	1,824	17.0	525	4.9	1,299	12.1
5 Persons	804	7.5	252	2.4	552	5.1
6 Or More Persons	496	4.6	169	1.6	327	3.0
TOTALS	10,740	100.0	4,132	38.6	6,608	61.4

	PERSONS	OCCUPIED UNITS	MEAN PERSONS PER UNIT
Owner Occupied	19,261	6,608	2.92
Renter Occupied	10,201	4,132	2.47
TOTALS	29,462	10,740	2.74

7. Rooms Per Unit And Overcrowding

Table 18-24 summarizes the number of rooms per year round housing unit from the 1980 Census. Almost two thirds (64.1%) of all year round units had five rooms or more. Units with 1-2 rooms made up 5.9% of all year round units. The median number of rooms per unit was 5.1 rooms. The 1970 Census indicated a median number of rooms per unit of 5.0.

Overcrowding in residential units has been used as an indicator of housing problems. Overcrowding is defined as housing units with 1.01 or more persons per room. Table 18-24 summarizes the number of persons per room for occupied housing from the 1980 Census. Out of a total of 10,740 occupied units in 1980 there were 635 units (5.9%) which had 1.01 or more persons per room. Out of 4,132 renter occupied units, 395 (9.6%) were overcrowded and out of 6,608 owner occupied units 240 (3.6%) were overcrowded. Persons in overcrowded units (3,517) made up 11.9% of all persons in occupied units.

The 1970 Census indicated that out of a total of 6,846 occupied units there were a total of 500 (7.3%) overcrowded units. Out of the 500 overcrowded units 254 units (3.7%) were renter units while 246 units (3.6%) were owner units.

TABLE 18-24

1980 PERSONS PER ROOM BY TENURE							
PERSONS PER ROOM	TOTAL OCCUPIED UNITS	RENTER UNITS NUMBER	RENTER UNITS PERCENT Occupied	Renter	OWNER UNITS NUMBER	OWNER UNITS PERCENT Occupied	Renter
1.00 or less	10,105	3,737	34.8	90.4	6,368	59.3	96.4
1.01 to 1.50	359	207	1.9	5.0	152	1.4	2.3
1.51 or more	276	188	1.8	4.6	88	0.8	1.3
TOTALS	10,740	4,132	38.5	100.0	6,608	61.5	100.0
PERSONS IN UNITS WITH 1.01 + PERSONS PER ROOM							
Renter Occupied	1,986						
Owner Occupied	1,531						
TOTALS	3,517						
Total Persons In Units	9,462	Percent Of Persons In Units With 1.01 + Persons Per Room					11.9%
PERSONS IN UNITS WITH 1.01 + PERSONS PER ROOM LACKING COMPLETE PLUMBING FOR EXCLUSIVE USE				77			
UNITS WITH 1.01 + PERSONS PER ROOM AND LACKING COMPLETE PLUMBING FACILITIES FOR EXCLUSIVE USE				Total	16		
				Renter Occupied	14		
				Owner Occupied	2		

8. Cost Of Housing

Tables 18-25 and 18-26 indicate contract rents and monthly owner costs of housing from the 1980 Census. Table 18-27 indicates mortgage and rental payments for housing from the 1975 Special Census. The 1980 median contract rent of renter occupied units excluding mobile homes was $204 per month. The 1980 median selected monthly owner costs for units with mortgage was $352 and for units without a mortgage $95. In 1980 exactly half of all renter households (49.9%) paid monthly rents of $200 -$399 per month. Almost one half (45.1%) of renter households paid monthly rents of $50 -$199. Only 5.1% of renter households paid monthly rents of over $400.

The 1975 Special Census indicates that both rents and mortgage payments were far lower than in 1980. In 1975 for instance only 2.1% of homeowners paid $350 or more per month for their mortgages. Over one-third (36.1%) of homeowners owned their homes outright. The remaining homeowners paid the following monthly mortgages; 25.3% paid $149 or less, 26.5% paid $150 -$249, and 10% paid $250 -$349. In 1975 more than two thirds of all renters (68.7%) paid rents of $150 per month or less and only 1% paid $277 or more per month. Other renters paid the following monthly rents; 26.2% paid $151 -$225 and 4% paid $226 -$276.

TABLE 18-25

1980 CONTRACT RENT-RENTER OCCUPIED UNITS[1]

AMOUNT PER MONTH	RENTER HOUSEHOLDS
$ 50 to 99	45
100 to 119	367
120 to 139	183
140 to 149	122
150 to 159	250
160 to 169	121
170 to 199	657
200 to 249	911
250 to 299	495
300 to 399	527
400 to 499	109
500 or more	11
no cash rent	79
TOTAL	3,877

Median Contract Rent Was $204 Per Month

[1]Excludes Mobile Homes

TABLE 18-26

1980 SELECTED MONTHLY OWNER COSTS[1]			
UNITS WITH MORTGAGE		UNITS WITHOUT MORTGAGE	
Amt. Per Month	Owner Households	Amt. Per Month	Owner Households
$ 0 - 99	19	$ 0 - 49	53
100 - 149	127	50 - 74	309
150 - 199	454	75 - 99	351
200 - 249	515	100 - 124	253
250 - 299	495	125 - 149	101
300 - 349	526	150 - 199	152
350 - 399	454	200 - 249	26
400 - 449	373	250 +	38
450 - 499	338		
500 - 599	432		
600 - 749	392		
750 +	183		
TOTALS	4,308		1,283

Median Selected Monthly Owner Costs With Mortgage: $352
Median Selected Monthly Owner Costs With No Mortgage: $95

[1]Monthly owner costs (real estate taxes, fire and hazard insurance, utilities, fuels and mortgage). The data exclude owner occupied condos, mobilehomes and trailers.

TABLE 18-27

1975 MORTGAGE & RENTAL PAYMENTS FOR HOUSING	
TOTAL	PERCENTAGE
904	10.26 No Response
1,314	14.91 Own - $149 or less
1,378	15.64 Own - $150 - $249
519	5.89 Own - $250 - $349
109	1.24 Own - $350 or more
1,876	21.29 Paid for
1,763	20.01 Rent - $150 or less
672	7.63 Rent - $151 - $225
106	1.20 Rent - $226 - $276
25	.25 Rent - $277 or more
144	1.63 Other arrangements
TOTAL 8,810	

C. HOUSING MARKET CHARACTERISTICS

1. Introduction

This Chapter documents the activities of the local housing market and its responsiveness to the needs of the commuity. It discusses population growth, construction and subdivision activity, consumer and producer housing costs, affordability, overpaying and housing demand. An understanding of the local housing market is essential for assessing housing needs and developing a workable housing program.

2. Population Growth Rates

The City of Woodland experienced a relatively stable rate of growth during the 1950's, 1960's and early 1970's. The population increased at an average annual rate of 3.72% from 1950 to 1960, 4.34% from 1960 to 1970 and 4.25% from 1970 to 1975. From 1975 to 1980, the average annual rate of growth declined to 3.50% and was 2.2% from 1980 to 1988. The rather abrupt decline in growth rate from 1980 to 1987 can be linked mainly to inflationary trends and the recession of 1981-82, both of which resulted in less economic growth and fewer jobs. Table 18-28 summarizes the population growth rates in Woodland from 1940 to 1988.

TABLE 18-28

1940-1987 GROWTH RATES

Year	Interval	Population	Population Increase	Percent Increase	Annual Growth Rate
1940		6,637			
	10 years		2,749	41.4%	3.53% (1940-1950)
1950		9,386			
	10 years		4,138	41.1%	3.72% (1950-1960)
1960		13,524			
	10 years		7,153	52.9%	4.34% (1960-1970)
1970		20,677			
	5 years		4,778	23.1%	4.25% (1970-1975)
1975		25,455			
	5 years		4,780	18.8%	3.50% (1975-1980)
1980		30,235			
	4.7 years		2,890	9.6%	1.94% (1980-1985)
1985		33,034			
	3 years		3,907	11.8%	3.94% (1985-1988)
1988		36,941			

Source: U.S. Census, 1975, California Department of Finance Special Census and January 1, 1988 Estimate.

3. Residential Construction Activity - Recent Trends

Table 18-29 outlines residential building permits from January 1, 1970 to August 31, 1987 by building type, number of permits and number of units. During this time frame the City averaged 390 residential units constructed per year. The annual averages by building type are as follows: single family -181 units per year, split lot duplex -27 units per year, condos -14 units per year, duplexes -20 units per year and multiple family units (three or more units) 159 units per year. Apartments of five or more units averaged 150 units per year. The construction of single family units had declined steadily from a high of 331 units in 1976 to a low of 72 units in 1982. The year 1983, however, marked the end of this decline with permits issued for 167 single family and split lot duplex units. Duplex construction has remained low since the last good year (44 units) in 1979. Only 19 duplexes were constructed from January 1, 1980 to August 31, 1987. Four triplexes and six fourplexes have been constructed since 1980. Apartments of five or more units have made a strong comeback after two years of little activity --44 units during 1981-82. Calendar year 1986 was a record breaking year for appartment construction (635 units). A shortage of R-2 Zone (Duplex Residential) vacant lots and small R-M Zone (multiple family residential) vacant parcels may have contributed to the low levels of duplex, triplex and fourplex construction. This will be discussed further in later chapters.

Table 18-29 also indicates the percentage of total units constructed by building type. The largest category of units by type is single family detached, single family attached and split lot duplexes (54.1%) followed by apartments of five or more units (38.6%), duplexes (5%) and triplexes/fourplexes (2.6%).

TABLE 18-29

RESIDENTIAL BUILDING PERMITS/UNITS January 1, 1970 to August 31, 1987[1]								
					Multiple Family 3+			
Year	Single Family[2]	SLD	Condo	Duplex	Triplex	Fourplex	5+	Total
1970	182	---	---	10/20	---	3/12	3/120	334
1971	124	---	194	13/26	---	1/4	1/47	395
1972	361	---	---	27/54	---	3/12	4/83	510
1973	268	---	---	1/2	---	2/8	8/442	720
1974	232	---	15	11/22	---	1/4	1/32	305
1975	175	---	---	1/2	---	---	---	177
1976	331	---	---	45/90	1/68	---	1/6	495
1977	262	14	---	22/44	1/3	2/8	3/130	461
1978	121	24	14	2/4	---	1/4	3/138	305
1979	104	30	---	22/44	---	---	2/117	295
1980	46	52	---	5/10	---	---	1/92	200
1981	66	31	---	---	---	---	---	97
1982	43	28	---	2/4	---	---	1/44	119
1983	139	28	---	1/2	---	---	2/98	267
1984	110	50	---	3/6	---	---	3/162	328
1985	162	16	---	2/4	---	6/24	5/453	659
1986	257	10	---	3/6	1/12	---	6/638	923
1987 (Jan-Aug)	217	4	18	3/5	---	---	2/86	330
Total	3,200[3]	287[4]	241	173/345	3/83	19/76	45/2688	6,920
Annual Average Units (17.7 yrs)	181	27[5]	14	20	5	4	152	391
Percent of Total Units	46.2	4.1	3.5	5.0	1.2	1.1	38.8	

[1]Source: Building Inspection Division Building Permit Records.
[2]Excludes mobile homes.
[3]Includes eight manufactured homes (January 1, 1984 to August 31, 1987).
[4]Includes 37 manufactured homes (January 1, 1984 to August 31, 1987).
[5]10.67 years.

Table IV located in the Appendix summarizes building permit activity for multiple family residential projects (3+ units) from January 1, 1975 through August 31, 1987 by month, project name, units, bedrooms and net acreage. Of the 2,083 units built during the 12.67 year period most were two bedroom units (58.8%) followed by one bedroom units (36.6%), three bedroom units (2.4%) and studio units (2.1%). The land area utilized for the construction of the 2,083 units comes to 91.8 net acres for an average density of 22.7 units per net acre.

The preferred type of housing in Woodland continues to be the single family detached homes and the split lot duplex. Table 18-16 located in the Data Base, however, indicates that since 1980 more apartment units have been constructed than single family homes (43.7% single family versus 56.3% multiple family).

4. Demolitions

The City of Woodland has experienced relatively low levels of residential demolitions. A review of the Building Inspection Division Building Permit files has indicated that during the 10-year period from January 1, 1972 to December 31, 1982 the City averaged 10 residential demolitions per year. This seems to indicate further that the condition of the existing housing stock in Woodland is fairly good and that most units have been and continue to be well maintained.

5. Condominium Conversions

On April 21, 1981 the City of Woodland adopted a Condo Conversion Ordinance as a result of specific condo conversion proposals by an investment firm. The City, however, has not had any condo conversions take place since the Ordinance was adopted. Interest in condo conversions has remained low since the time of the conversion proposals in late 1979.

6. Assisted Housing Construction

A total of 214 units of assisted housing have been constructed in Woodland from January 1, 1983 to August 31, 1987. All of these units are in seven different multifamily developments. Together they comprise 7.7% of all multifamily units constructed in Woodland during the above timeframe. Table 18-30 provides a breakdown of this recently built assisted housing by name of project, units, tenant group and program. A subtotal of 44 units or 38.6% of all the assisted units are for the elderly while the remaining 79 units are specifically reserved for the elderly while the remaining 70 units are for other groups (including the elderly).

7. Mobile Home Parks

The City of Woodland has six mobile home parks of varying sizes totaling 652 spaces. These spaces are almost always 100 percent occupied indicating a strong demand for this type of housing. The last mobile home park built in Woodland was approved in May of 1976. It appears that 1980 Census enumerators mistabulated the unit count of mobile homes since their count of 487 units was 165 units less than the maximum possible.

TABLE 18-30

1983-1987[1] MULTIFAMILY ASSISTED HOUSING				
Year	Project Name	Type Program	Units	Tenant Income Group
1985	Heritage Oaks	Mortgage Revenue Bond	24	Low Income
1985	The Village	Mortgage Revenue Bond	39	Low Income
1985	Pebblewood	Bonus Density	4	Very Low Income
1985	The Greens	Bonus Density	19	Low or Moderate Income (Elderly)
1985	Woodland Manor	Bonus Density	5	Very Low Income (Elderly)
1986	Walnut Woods	Bonus Density	3	Very Low Income
1986	Cottonwood Meadows	Rental Housing Const.	15	Very Low Income
			5	Low Income
		TOTAL	114	

27 Very Low Income (20 Elderly)
78 Low Income (15 Elderly)
9 Moderate Income (All Elderly)
44 Units (new) Reserved for elderly -- actual number will be more.

[1]January 1, 1983 to August 31, 1987.
Source: Planning and Building Inspection Divisions.

8. Elderly Housing

A total of 205 units of multi-family (apartments) housing were constructed from 1985 to 1987. All of these units are in six different multifamily developments. These units represent 12.7% of all the multifamily construction from January 1, 1980 to August 31, 1987. It is estimated that 61 of the 205 elderly units will be specifically reserved for very low to moderate income elderly households. Table 18-31 provides a breakdown of the multifamily elderly housing by project, units and tenant income group.

TABLE 18-31

1980-1987 ELDERLY HOUSING (MULTI-FAMILY) PROJECTS				
Year	Project Name	Total Units	Tenant Income Group	Status
1985	The Greens	19	19 Low or Moderate	Finaled 1986
1985	Woodland Manor	49	5 Very Low per Density Bonus	Finaled 1986
1986	Fowler Commons	5	1 Very Low Income (Section 8)	Finaled 1987
1986	Cottonwood Meadows	47	15 Very Low Income 5 Low Income 16 Very Low Income (Projected Section 8 Units)	Finaled 1987
1987	Lincoln Gardens	65	Market Rate	Finaled 1988
1987	Roth Apartments	20	Market Rate	Finaled 1988
	TOTALS	205		
		37 Very Low Income 14 Low Income 10 Moderate Income 61		

Source: Planning and Building Inspection Divisions.

9. Subdivision Activity

Tables 18-32 and 18-33 summarize all of the final subdivision or parcel maps recorded for residential development from January 1, 1980 to August 31, 1987 (7.7 years). Table 18-32 identifies final map approvals for low density development (0-10 units per gross acre) while Table 18-33 identifies final maps recorded for medium density development (8 to 25 units per gross acre). The year 1980 is used as a starting point for analysis purposes since there are few low density vacant lots in subdivisions approved prior to 1980.

The final maps for low density subdivisions approved since January 1, 1980 range in area from 6.5 to 27.3 gross acres. Most of the larger subdivisions involved the phased construction of improvements and build out of units. During the 7.7 year period studies, the City approved 1,562 low density lots that would allow for a total of 1,562 units. This activity would average out at 203 low density lots recorded per year. Most of the approved lots are for single family detached homes or for split lot duplexes.

TABLE 18-32

1980-1987 SUBDIVISIONS -- LOW DENSITY DEVELOPMENT					
			Density		
No.	Subdivision	Date Recorded or Approved	No. of SF Lots	Gross Acreage	Lots/ Acre
1	Dodd's Ranch Unit #2	10/8/80	64	8.2	7.4
2	North Park Unit #1	11/7/80	57	12.9	4.4
3	Schuler Ranch Estates	11/10/80	135	27.3	4.9
4	North Park Unit #2	7/29/83	71	14.8	4.8
5	President's Park #2	9/8/8	73	12.4	5.9
6	Westland Ranch Estates #1	3/23/84	76	16.9	4.5
7	Dodd's Ranch #3	7/13/84	54	8.1	6.7
8	Park East #1	8/7/84	58	8.1	7.2
9	North Park #3	8/17/84	29	7.6	3.8
10	Willow Springs Ranch #1	7/24/85	90	19.5	4.6
11	North Park #4	10/31/85	68	14.0	4.9
12	Streng Park #4	3/9/86	75	18.4	4.1
13	Faria Park #1	5/28/86	44	13.9	3.2
14	Streng Park #4, Phase II	7/3/86	24	5.0	4.8
15	Sunrise #1	8/29/86	24	5.5	4.4
16	Presdent's Park #2	9/18/86	48	6.5	7.2
17	Willow Springs Ranch #2	10/23/86	83	15.7	5.3
18	Parkwood Place #1	4/29/87	79	12.6	6.3
19	Country Park #3546	5/12/87	20	4.6	4.3
	County Park #3425	5/12/87	96	17.2	5.6
20	Streng Park #5	9/17/87	62	13.3	4.7
21	Courtside Estates #1	9/18/87	46	6.5	7.0
22	Woodland Meadows	7/28/87	86	15.4	5.6
23	Shadow Wood Village	11/10/87	51	12.8	4.0
24	Faria Park #2	7/18/87	50	15.6	3.1
	TOTAL		1,562	312.8	
	AVERAGES				5.0

Source: Planning Division.

TABLE 18-33

1980-1987 PARCEL MAPS AND SUBDIVISIONS FOR MULTIPLE FAMILY PROJECTS					
#	Subdivision/Parcel Map	Date Recorded or Approved	No. of MF Lots	Net Acreage	Proposed Units
1.	PM #3125 Ich, Inc. (RM/PD)	12/30/85	1	7.25	104
2.	PM #3467 Streng/Lewis (RM/PD)	6/4/86	1	8.24	160
3.	Sunrise (Proposed R-1/PD)	8/29/86	1	4.0	81
	TOTALS		3	19.49	345

Source: Planning Division.

Split lot duplexes (or halfplexes) are a relative new type of housing for Woodland. This concept involves creating lots ranging from 30 to 35 feet in width which allows one duplex structure to be located on two adjacent lots with the common property line passing between the two units in the duplex. This allows owner occupancy of one-half of a duplex on a separate parcel of land. Other distinguishing features include separate utility and electrical hookups, two adjacent one hour fire walls and one common roof. The first units were constructed in Streng Park in late 1977. Since that time 287 units as of August 31, 1987 have been constructed in 11 different subdivisions.

The approved low density subdivisions account for 312.8 gross acres which results in an average density of 5.0 units per gross acre based on 1,562 units. The average gross acres approved per year for low density subdivisions is 40.6. A summary of vacant low density lots is included in the Housing Constraint Analysis chapter.

The Faria Park Subdivision includes two large condo sites for 120 units. These will be the first condo units to be constructed in Woodland since 1978. These units will be in the luxury home price range.

The parcel maps and tentative maps recorded for medium density residential development account for a total of 3 lots and 345 units on 19.49 net acres of land (see Table 18-33). Two of the approved lots are zoned for R-M Multiple Family Residential which allows medium density residential development while the other is zoned R-1/PD Single Family Residential which allows for low density residential (0 to 10 units per gross acre). Subdivisions which are zoned R-1/PD may have multiple family residential development on designated parcels. In these subdivisions the overall subdivision density is maintained at 0-10 units per gross acre while on designated parcels the planned densities are higher. The lots created for medium density residential development have been approved in most cases for specific types of housing units (single family attached, apartments or fourplexes).

The City of Woodland has experienced a very orderly pattern of growth. New subdivisions and annexation areas have typically been contiguous to existing developed or largely developed areas. As a result the City is very compactly developed with limited potential for low density infill or redevelopment projects. All of the subdivisions in Table 18-32 are located on the west, south or east fringes of the City. Infill areas and vacant lots are for the most part zoned for multiple family residential development. There are very few vacant low density lots outside of the newer subdivisions.

10. Housing Availability/Vacancy Rates

Refer to "Tenure and Vacancy Rates on Page 18-15 of the Data Base -- Housing Characteristics, for a complete discussion of housing availability/vacancy rates.

11. Sales Prices of New Homes

Table 18-34 summarizes the September 1987 sales prices and cost per square foot of new single-family detached homes in Woodland. The new units range from the high \$70's to high \$90's. The average cost per square foot is \$68.32. Based on September 1987 California Association of Realtors (CAR) data, it is estimated that the median price of a single family home in Woodland was \$91,667. The CAR also reported that the Sacramento Area which includes Woodland had the most affordable housing in the State in September 1987, that the California median price of a single family home was \$143,882 and that the nation-wide median price of a single family home was \$84,900.

The sales prices of starter homes or homes priced in the lower third of the housing market in Woodland are generally \$75,000 to \$100,000. The mid-priced homes are generally \$100,000 to \$150,000 and the upper range homes are considered as those \$150,000 or more. The bulk of the 1987 new home sales activity has been in the starter home market. More custom homes than in previous years are now being built in the Faria Park Subdivision. Local builders have indicated that new home sales were excellent in 1987 with almost a zero vacancy rate for new tract homes in the starter home market.

12. Sales Prices of Used Homes

The majority of used single family homes sold in 1987 ranged from the low \$70's to the high \$90's. Table 18-35 summarizes some of the recent home sales prices in Woodland. The average sales price of the homes in Table 18-35 is \$102,090. The Sacramento Metropolitan Chamber of Commerce reported that the 1986 average home resale price in Yolo County was \$108,909 and that the median home resale price in California was \$130,648.

The advertised sales prices of condos ranged from the low \$60's to the low \$70's and split lot duplex units generally sold in the \$70's and \$80's.

TABLE 18-34

1987 NEW SINGLE FAMILY DETACHED HOME SALE PRICES			
Subdivision	Sq. Ft.	Selling Price	Cost per sq. ft.
		dollars	
Willow Springs (Camray):	1192	86,950	75.21
	1364	92,950	68.15
	1562	96,950	62.07
	1502	94,950	63.22
	1605	98,950	61.65
President's Park	1251	77,000	61.55
Streng Bros. Homes:	1270	82,800	65.20
	1472	85,300	57.95
Parkwood (Camray):	930	79,950	85.97
	1119	83,950	75.02
	1460	95,950	65.72
	1594	97,950	61.45
Country Park (Lewis Homes):	1239	90,500	73.04
	1462	100,500	68.74
	1090	83,500	76.60
	1486	100,500	67.63
Woodland Meadows	1336	98,000	73.35
(Morrison Homes):	1495	101,000	67.36
Faria Park:	Sites are custom homes with prices ranging from $150,000 to $210,000.		

Source: September 1987 conversations with builders.

TABLE 18-35

1987 SALES PRICES OF USED SINGLE FAMILY HOMES
(JUNE-AUGUST)

Home Price Range	No. and Percent	Average
$ 40,000 - 49,999	0	0
50,000 - 59,999	8	55,000
60,000 - 69,999	5	67,200
70,000 - 79,999	15	73,300
80,000 - 89,999	18	84,600
90,000 - 99,999	21	95,100
100,000 - 120,999	14	109,900
121,000 - 150,999	9	137,000
151,000 - 200,999	6	164,300
201,000 +	5	231,650
Total	101	

Weighted average = $\frac{\text{Average of each range x frequency}}{\text{total}}$ = 102,090

Source: Yolo County Board of Realtors - Multiple Listing Sales Prices June-August 1987.

13. Rent Levels

Woodland's rents leveled off in 1986 and 87 after dramatic three to five percent per year increases in the previous five years. This leveling was caused in part by the interest rate decreasing from 15 percent to as low as nine percent over the last three years. However, rental homes (any rental unit with a yard) have retained the trend of three to five percent per year increases in rates. The reason behind this exception is the large demand for this type of rental housing[1].

Table 18-36 shows the results of two separate surveys done in 1986 and 1987. A rental rate range is given as well as an average rent for different types of units. These rent levels are later incorporated into an analysis of affordability and overpaying.

[1] September 1987 conversations with property managers and realtors.

TABLE 18-36

1987 ADVERTISED RENTS BY TYPE UNIT

Type Unit	Range	Average Rent
Single family	$450 - $850	$650
Townhouses	$376 - $480	$428
Condominiums	$450 - $525	$488
Apartments:		
Studio	$210 - $315	$262
1 Bedroom	$142 - $395	$268
2 Bedroom	$215 - $550	$382
3 Bedroom	$350 - $674	$512

Source: 1986 and 87 Community Development Department Rental Survey and September 1987 Conversations with Realtors.

14. Affordability

Housing is a basic necessity of living. Everyone is a housing consumer and is housed in some fashion. We either rent or buy or make other arrangements. Housing consumers require a housing market that allows for housing costs to be balanced with other basic needs in order for housing to be considered affordable. The affordability of housing is subject to a number of variables pertaining to 1) the consumer (his income, family size, assets and liabilities), 2) the housing market (rents, sales prices, vacancy rates, interest rates, financing availability and construction activity and 3) related housing costs (utilities, insurance and property taxes).

The affordability problem for housing consumers is becoming known as the affordability gap. A housing study prepared for the City of Sacramento by Questor Associates defines the affordability gap as "the gap that exists between rising housing costs and lagging consumer incomes --the income required to purchase housing at a price level that supports reasonable profits or incentives to construct housing. The precise dollar value of this gap depends on varying income levels and house prices. More specifically the affordability gap is the difference between what the producer can afford to build and the consumer can afford to pay."[1] For buyers, the inability to afford to buy a house is a combination of insufficient assets, insufficient monthly income and an inability to qualify for a loan. For renters, the inability to afford to rent is mainly insufficient income for monthly rent and utilities.

15. Overpaying

Overpaying is closely related to affordability in that is helps to define more clearly the parameters for housing affordability. The overpaying concept recognizes that for every household there are practical limits for housing expenses and that housing costs must be balanced with other basic household needs as well as optional expenditures. Rules of thumb for overpaying vary according to property managers, lenders and public agencies.

Overpaying is defined by the California Department of Housing and Community Development (HCD) as paying more than 25% of gross household income for housing and related housing costs. This percentage factor is particularly relevant to very low and low income households (households making 80% or less than the county median family income with adjustments for family size). For the lower income groups 25% of household income represents a threshold beyond which other basic household needs may be affected. Moderate and above moderate income households (households making 81% or more than the county median family income with adjustments for family size) can generally pay more than 25% of their incomes for housing without sacrificing other basic necessities. For ownership housing, monthly housing costs should not exceed 30% of monthly income to be considered affordable. A maximum of three times the gross annual income is also a standard of affordability for ownership

[1]Affordable Housing Study for the City of Sacramento, Questor Associates, February 1981.

housing. The extent of overpaying for housing among renters and buyers is an indicator of the need for lower cost housing and government sponsored programs to assist housing consumers.

The 1980 Census can be used to derive the number of renter and owner households that are overpaying. Table 18-37 summarizes the 1980 households overpaying by tenure and income group. Very low and low renter households had the highest frequency of overpaying in 1979. There were 1,385 very low income households and 373 low income renter households overpaying. The very low income renter households overpaying (1,385) constituted one-third (33.5%) of all renter households (4,132) and 47% of all the very low income households in 1979 (2,905). The number of moderate and above moderate income renter households overpayingng is not considered significant (2.6% and 1.4% respectively) given their incomes and the availability of affordable units.

The highest frequency of overpaying among owners also involved very low and low income households. There were 416 very low and 321 low income owner households overpaying in 1979. Above moderate income households had the next highest frequency of overpaying with 300 households overpaying.

The number of very low and low income owner households overpaying is considered significant due to the percent of households overpaying by income group. The 416 very low income owner households overpaying constituted 14.3% of the very low income group and the 321 low income owner households overpaying constituted 16.9% of the low income group. The number of above moderate income owner households overpaying is not considered significant given the number of households involved, their ability to pay and the availability of affordable units.

Very low income renters and owners had the highest frequency of overpaying as a group. There were 1,801 very low income households overpaying in 1979 which constituted 62% of the total income group. Low income renters and owners had the next highest frequency of overpaying with 694 households which constituted 36.5% of the total income group. The frequency of overpaying among renter and owner households in the moderate and above moderate income groups is about the same --11.8% and 10.2% respectively. This frequency of overpaying is not considered significant given the income levels and the general availability of affordable housing for these groups.

16. 1987 Affordability/Overpaying Assessment

a. Introduction

This section identifies typical costs of affordable housing by income group and estimates the percent of households that are currently overpaying for housing by income group. This assessment takes into account household incomes, current interest rates (1987), local sales prices and rents (1987) and affordability and qualifying criteria.

Most housing cost and affordability studies utilize U.S. Department of Housing and Urban Development (HUD) income categories and various affordability rules of thumb to determine the ability to pay for housing. The four income groups used by HUD for analysis purposes are defined as follows:

TABLE 18-37

1979 OVERPAYING BY INCOME GROUP AND TENURE[1]

Income Group[2]	Renters Overpaying[3]			Owners Overpaying[4]			Total Households Overpaying	
	Number Over-paying	% of Total Renters	% of Total Income Group	Number Over-paying	% of Total Owners	% of Total Income Group	Number Over-paying	% of Total Income Group
Very Low $0-$10,350/year 2,905 households 1979	1,385	33.5%	47.7%	416	6.3%	14.3%	1,801	62.0%
Low $10,351-$16,498 1,900 households 1979	373	9.0%	19.6%	321	4.9%	16.9%	694	36.5%
Moderate $16,499-$24,696 2,439 households 1979	106	2.6%	4.3%	181	2.7%	74%	287	11.8%
Above Moderate $24,697 + 3,493 households 1979	57	1.4%	1.6%	300	4.5%	8.6%	357	10.2%
	1,921	46.5%		1,218	18.4%		3,139 (29.2% of Total Households	
	(Total 1980 Renter Households 4,132)			(Total 1980 Owner Households 6,608)			(Total 1980 Households 10,740)	

[1]1980 Census. Note that there were 157 renter and 35 owner households that did not respond. Overpaying is paying paying more than 25% of gross income for gross rent (the sum of contract rent and utility costs) and selected monthly owner costs (the sum of property taxes, insurance, utilities and mortgage payments.

[2]Table 18-7, 1979 Distribution of Household Income.

[3]Renter occupied housing units.

[4]Owner occupied non-condo units. Excludes mobile homes and trailers and units at an address with two or more units.

Very low............. 0-50% of County Median Family Income
Low..................51-80% of County Median Family Income
Moderate.............81-120% of County Median Family Income
Above Moderate.......Above 120% of County Median Family Income

The most recent estimates for Yolo County Median Family Incomes are FY87 from HUD. Table 18-38 summarizes median family incomes by family size. For analysis purposes four-person families are used for owner households (median income $31,600) and two-person families are used for renter households (median income $25,300).

In order for housing to be considered affordable the percentage of gross income devoted to housing should not exceed 25% of gross household income especially for very low and low income households (incomes at or below 80% of the area median income with adjustments made for household size). Moderate and above moderate income households can usually pay more than 25% of gross family income for housing without sacrificing other basic necessities. Local realtors and loan officers have indicated that qualifying rules of thumb for moderate and above moderate income home buyers are undergoing change in recognition of the fact that home ownership requires a greater percentage of household income in order to qualify with present interest rates and production costs. Some lenders are willing to lend to buyers committing as much as 35% of their gross incomes for housing although 30-33% is the norm (1987).

TABLE 18-38

FY 1987 MEDIAN INCOME BY FAMILY SIZE, SACRAMENTO MSA[1]

Number of Persons in Family	Median Income
1	$ 22,100
2	25,300
3	28,400
4	31,600
5	34,100
6	36,700
7	39,200
8	41,700

[1]FY 1987, U.S. Department of Housing and Urban Development.

b. 1987 Income to Rent

Table 18-39 indicates typical rents that are considered affordable by income group and family size with various percentages of gross family income allocated to monthly rents. In using Table 18-39, it should be noted that

TABLE 18-39

1987 AFFORDABLE MONTHLY RENTS BY INCOME GROUP AND FAMILY SIZE				
	Percent of County Median Family Income (Family of 2, FY 1987)			
	50% very low	80% low	100%	120% above moderate
Family Income	$12,650	$20,250	$25,300	$30,350
Affordable Monthly Payment:				
@ 25% of gross monthly income	$ 264	$ 422	$ 527	$ 632
@ 30% of gross monthly income	$ 316	$ 506	$ 632	$ 759
@ 35% of gross monthly income	$ 369	$ 591	$ 738	$ 885

1987 AFFORDABLE MONTHLY RENTS BY INCOME GROUP AND FAMILY SIZE				
	Percent of County Median Family Income (Family of 4, FY 1987)			
	50% very low	80% low	100%	120% above moderate
Family Income	$15,800	$25,300	$31,600	$37,900
Affordable Monthly Payment:				
@ 25% of gross monthly income	$ 329	$ 527	$ 658	$ 790
@ 30% of gross monthly income	$ 395	$ 632	$ 790	$ 948
@ 35% of gross monthly income	$ 461	$ 738	$ 922	$ 1,105

households and families where incomes are at or below 80% of the County Median Income (with adjustments for family size) are generally looking at affordable rents not exceeding 25% of their gross monthly income. Due to the costs of other basic necessities and their relatively low incomes, these households cannot pay more than 25% of their gross incomes for housing without making sacrificies in other important areas such as health care, food, et cetera. The higher percentages of income paid for housing are included for analysis and comparison purposes only. Two and four-person families are used in Table 18-39 to represent young couples with children who can live in smaller rental units such as one and two-bedroom units and young couples with two children who may require larger rental units such as duplexes or townhouses.

The 1987 Rental Housing Survey indicated the following general rent structure for new rental units in Woodland:

1987 Rents Per Month by Type Unit (New Rentals)

Detached Home	$700
Duplexes	650
Townhouses and Condos	480
Apartments	
Studio	300
One-bedroom	350
Two-bedroom	430
Three-bedroom	500

Comparing the above rents with the affordable monthly rents in Table 18-39 provides an indication of the incomes required to rent new units in Woodland.

An analysis of the preceding sections on rent levels (particularly for new units), income groups, overpaying and affordability indicates that the local rental housing market will not provide an adequate supply of affordable new units for two-person households with incomes at or below 50% of the County Median Family Income (very low income). Two-person households with incomes between 51 and 80% of the County Median Family Income (lower income households) should be able to find affordable rental units --primarily one and two-bedroom apartments. This income group, however, may have difficulty finding affordable duplexes or single family detached rental units. Two-person households with incomes at or above 81% of the County Median Family Income (moderate and above moderate income households) will be able to find affordable rental units of all kinds with the possible exceptions of some larger single family detached units.

The rental housing market will not provide an adequate supply of new affordable two and three-bedroom apartment units for four person families and households that are at or below 50% of County Median Family Income. The typical rents for two-bedroom apartments are $70 to $100 a month more than they should be for households earning exactly 50% of the County Median Family Income. Those earning less will be paying considerably more than 25% of their income for housing. Four person families and households that are between 51 and 80% of County Median Income should find an adequate selection of affordable apartments, townhouses and other types of rental housing although again, there will be limited numbers of affordable duplexes and detached single family homes. Four person families and households with incomes at or

above 81% of the County Median Income (moderate and above moderate income) will be able to find most types of affordable rental units with the exception of some duplexes and single family detached homes.

c. 1987 Income to Buy

Table 18-40 provides estimates of 1987 maximum affordable home prices for a family of four based on income and financing characteristics. Affordable monthly payments are broken down into 30% of gross monthly income and 35% of gross monthly income. These percentages are used as they represent qualifying rules of thumb for home buyers that are being used by lenders. In all cases the home prices assume a 30-year fixed rate mortgage with a 10% downpayment. Interest rates used range from 9 to 11 percent. The family incomes used are based on the estimated FY 1987 Yolo County Median Family Income for a family of four. All of the home prices used are estimates made by using monthly loan amortization payment tables (Realty Bluebook). Affordable home prices in relation to family incomes will, of course, vary depending on buyer assets, the lender terms of the sale, fees and closing costs. It should also be noted that the monthly payment examples are strictly for mortgage payments and do not include other costs associated with homeownership including maintenance and repairs.

It is estimated by HCD that property tax, insurance, operations, maintenance and repair and utilities for a home with a $60,000 mortgage will be $171.00 a month. The same costs for a home with an $80,000 mortgage will be $219.00 a month.[1] From those examples, it is easy to see how total housing costs can exceed even 35 percent of gross family income.

Table 18-40 indicates that in most cases median family incomes must be 81% or more of the County median in order to buy a starter home or lower priced used home in Woodland. Families at or below 50% of the County median family income would find it difficult to set aside a 10% downpayment, find a lender and qualify and then pay 30-35% of their gross monthly income for housing. When the costs of ownership are added to the monthly mortgage payments there would be little remaining for transportation, food, healthcare and other necessities. Furthermore, used homes for sale in the lower price ranges (50's and 60's) are generally small or in need of major repair or both.

[1]Volume 2, The California Housing Plan, HUD 1983.

TABLE 18-40

1987 MAXIMUM PRICE OF AFFORDABLE HOUSING BY INCOME GROUP AND FINANCING CHARACTERISTICS				
	Percent of County Median Family Income (Family of 4, FY 1987)			
	50% (very low)	80% (low)	100% (median)	120% (above moderate)
Family Income	$15,800	$25,300	$31,600	$37,900
Affordable Monthly House Payment:				
@ 30% of Gross Monthly Income	$ 395	$ 632	$ 790	$ 948
Maximum Affordable Price of House Assuming 30 years Fixed Rate Mortgage and 10% Down				
@ 9% Interest	$ 54,440	$ 86,670	$108,840	$130,000
@ 10% Interest	50,000	80,000	100,000	120,000
@ 11% Interest	46,000	73,670	92,220	110,550
Affordable Monthly House Payment:				
@ 35% of Gross Monthly Income	$ 461	$ 738	$ 922	$ 1,105
Maximum Affordable Price of House Assuming 30 years Fixed Rate Mortgage and 10% Down				
@ 9% Interest	$ 63,550	$101,890	$127,220	$152,550
@ 10% Interest	58,220	93,330	116,670	140,000
@ 11% Interest	53,780	86,110	107,780	128,890

18.D HOUSING CONSTRAINT ANALYSIS

1. Introduction

This Section analyzes nongovernment and government constraints to the maintenance, improvement or development of housing for all income levels in Woodland. Nongovernment constraints to the development of housing are economic or housing market forces affecting housing such as financing costs, the price of land or the cost of construction. Government constraints to the development of housing include land use controls such as planning and zoning, fees, and processing and permit procedures. Housing constraints whatever their type or origin in most cases directly or indirectly add to the cost of housing for consumers and limit housing opportunities for most income groups.

The identification and analysis of housing constraints is a part of the State mandated Housing Element process which involves formulating a housing program that seeks to remove or lessen those housing constraints that cen be addressed at the local level. Examples of removing or lessening government constraints in Woodland would potentially include a wide range of actions such as: 1) reductions in the fee schedule; 2) revising ordinances to increase permitted residential densities (units per acre) or 3) revising standards for on and off site improvements. Unfortunately, there is little that local governments can do to lessen or reduce nongovernment constraints since these constraints involve private industry (in a relatively free enterprise economy), and complex state and national economic policies. As a result housing elements must usually focus on government constraints.

2. Nongovernment Constraints

a. Cost Components of Housing

Major private market constraints to housing production and affordability include availability and cost of financing, availability and cost of land and cost of labor and materials. Table 18-41 shows the 1981 share of cost components in the purchase price of a residential unit in Yolo County. Table 18-42 shows a 1987 comparison of the cost components in the purchase price of single family homes for a large builder and independent builder. A summary of the cost components in the purchase price of multiple family housing follows on Table 18-43. Land and construction costs are consistently about 75% of sales price. Other cost components vary with the type of builder and unit.

TABLE 18-41

1981 SHARE OF MAJOR COST COMPONENTS IN THE PURCHASE PRICE OF RESIDENTIAL UNITS BY TYPE IN YOLO COUNTY[1]			
Item	Single Family Unit	Multi Family Unit	Mobile Home
Materials, labor and construction	56.0	71.8	61.8
Raw land	7.0	6.5	19.8
Interest	5.0	8.3	
Infrastructure	12.9	1.8	
Foundation cost			7.4
Building permits and fees	6.2	0.7	0.5
Profit, marketing and overhead	12.4	10.1	6.5
Setup and transportation fees			4.0
Other	0.5	0.8	
TOTAL:	100.0%	100.0%	100.0%

[1]Yolo County Housing Element, August 18, 1981.

TABLE 18-42

1987 PERCENT OF COST COMPONENTS IN SALES PRICE OF SINGLE FAMILY HOME		
A. LARGE BUILDER[1]		
Component		Percent of Sales Price
Land		
Raw land	8%	
Infrastructure	12%	20%
City Fees		8%
Building Costs		
Materials	15%	
Labor	25%	49%
Financing		8%
Marketing		5%
Profit		10%
TOTAL		100%
B. INDEPENDENT BUILDER[2]		
Component		Percent of Sales Price
Land (includes Infrastructure)		28.0%
City Fees		1.8%
Building Costs		
Materials	38%	
Labor	12.2%	50.2%
Profit		20.0%
TOTAL		100%

[1]Data collected from interviews with major home builders. Numbers are estimates only and give a ball park figure (October 1987).

[2]Data collected from interviews with independent builders who bought lots from large developers. These lots are typical of the small percent of lots from each subdivision that the large builders must sell (October 1987).

TABLE 18-43

1987 PERCENT OF COST COMPONENTS IN SALES PRICE OF APARTMENT COMPLEX[1]	
Component	Percent of Sales Price
Land	16.0%
Construction[2]	64.4%
Architecture	1.3%
Legal Fees	.64%
Real Estate Taxes	.15%
Recording and Title	.17%
Appraisal Fees	.05%
City Fee	1.78%
Financing	15.41%
TOTAL	100,0%

[1]Data collected from interviews with major multi-family builder October 1987).
[2]Construction cost includes profit to contractors and developers.

b. Availability and Cost of Financing

Financing problems are a major element of the housing affordability problem. High interest rates have produced chaos in the financial sector and have severely impacted the final selling or rental price of residential units. Over the last eight years, interest rates have fluctuated greatly from a high of nearly 19% to current rates of between 10% and 12% (October 1987).

Interest rates impact sales prices in two distinct ways. The first is in the interest cost of the construction loan itself. Usually, a developer obtains construction financing for a one-year term at interest rates equal to or exceeding the prime interesest rate. The cost of borrowing money is then passed onto the buyer in the form of a higher selling price for the unit.

The second way in which interest rates affect sales prices is the rate at which a prospective homeowner can borrow in order to secure a mortgage on the property. With a 13% interest rate, households would be required to pay a monthly mortgage payment of $741 on a $75,000 home (assuming a 10-percent down payment) over a 30-year amortization period. The same home would require a monthly mortgage payment of only $592 if a 10% mortgage interest rate prevailed.

Another major problem is the down payment required on a conventional home loan. Usually, a minimum down payment of 10 to 20% of the purchase price is required for home ownership. While existing homeowners may have built up equity over a period of years and can use it for a down payment in order to move up to a larger home, young families or individuals entering the home market for the first time may find it difficult, if not impossible, to acquire

the necessary capital for a down payment. There are alternatives to conventional loans. Government assisted loans, such as VA and FHA, are available to a potential borrower who qualifies. According to the Yolo County Board of Realtors, 37% of homes sold in Woodland between April and June 1987 were financed by conventional methods and 31% by the FHA 203B program.

Interest rates can have a dramatic impact on rents by driving up the cost of debt service. On a $1,000,000 loan to finance 25 rental units, each 1% rise in interest rates would require the property owner to increase the monthly rent per unit $32 just to cover the increased debt service. The difference between a 13% and a 17% loan, could mean the difference between renting a new apartment at $350 per month or renting it at $478 per month to cover the increased debt service.

Interest rates can also drive up the rents of existing units due to the cost of new construction and property manager concerns for return on investment based on current property values.

It appears that the October 1987 interest rates (10.75 to 11.5% for 30-year fixed rate loans) will allow the local housing market to continue to expand. These favorable interest rates, however, still deny a certain percentage of households the opportunity for homeownership and make it difficult for some renters to afford apartment housing. Interest rates need to come down still more in order for housing to be more affordable. More units of affordable housing would increase housing opportunities for buyers and renters and reduce overpaying.

These and other examples of private market constraints to affordable housing are seen by most observers as the major cause of the affordability gap and the overpaying problem. Unfortunately, the major causes of local housing problems are for the most part beyond local control or remedy.

c. Availability and Cost of Land

Woodland developers have indicated that residential land costs vary considerably as a result of the desirability of the area, the development fees involved, proximity to sewerage trunk lines, availability of drainage facilities and required dedications. Land sales prices in 1987 ranged from $30,000 to $35,000 per acre for raw land with no improvements, within the sewer service boundary. Land sales prices ranged from $60,000 to $65,000 per acre for land zoned R-1 and R-1/P-D (Low Density Residential) with a tentative subdivision map approved.

The availability of raw land and vacant lots will be discussed further in the Government Constraints Section of this Chapter. It can be stated at this point, however, that an adequate supply of land for residential development has existed and continues to exist in Woodland. New subdivisions have historically been located contiguous to existing development on the City's fringe due primarily to the value of the surrounding farm land for agricultural production and the location of the City's outlying sewerage trunk lines.

d. Construction Materials and Labor Costs

According to estimates by major developers in Woodland, construction materials and labor costs together represent about 75% of the purchase price of a residential unit. If material costs and labor are separated, approximately, 56% of the material-labor costs would be spent on materials.

e. Profit, Marketing and Overhead Costs

Profit, marketing and overhead costs represent approximately 20 to 25% of the purchase price of a single family unit. Profits constitute the largest component of the above three factors. Independent builders have a larger profit margin due to the absence of excessive marketing and overhead costs that the large builders have.

3. Government Constraints

a. Land Use Controls

1. Introduction

Land use planning and zoning are State mandated forms of governmental control and regulation of land uses which can have a potential impact on the availability and costs of land which in turn affects the cost of housing. Land use plans designate general geographic locations within a planning area for various land uses including residential developments such as single family subdivisions and apartments. Land use plans consist of an adopted land use map and land use element to the General Plan which serves generally as a narrative to describe the designated (planned future land uses) land uses and land use map. Land use elements establish the urban growth limits for a jurisdiction within a given time frame (usually 20 years) based on population and employment projections. Land use elements must designate an adequate supply and mix of residential, commercial and industrial land in order to provide for the projected growth. They are required by law to be updated every five years to assure an adequate supply and mix of land as conditions change. In most cases land use elements regulate the timing of growth by designating specific areas where new development will take place and reserving other areas for later development.

Zoning identifies on a parcel by parcel basis the various zone districts within a jurisdiction. This is accomplished through an official zoning map which designates geographically the applicable zoning districts for residential, commercial, industrial and other land uses. The Zoning Map is supplemented by the Zoning Ordinance which identifies in detail permitted land uses by zone district. The Zoning Map is required by State Law to be consistent with the land use designations of the Land Use Element. The Zoning Ordinance serves to implement the Land Use Element of the General Plan through defining by zone district specific uses and development standards for the various land use designations of the Land Use Element.

Planning and zoning are tools for regulating and controlling the amount, location, timing and type of new residential growth as well as the development standards for that growth. As such, they are the objects of a considerable

amount of debate and interest among planners, government officials, citizens and the development industry. Planning and zoning seek to balance competing goals and interests in order to allow for (1) orderly and efficient growth and use of resources, (2) provide for jobs and housing and (3) to protect the environment and the quality of life for all citizens.

2. The Land Use Element

a. Major Features

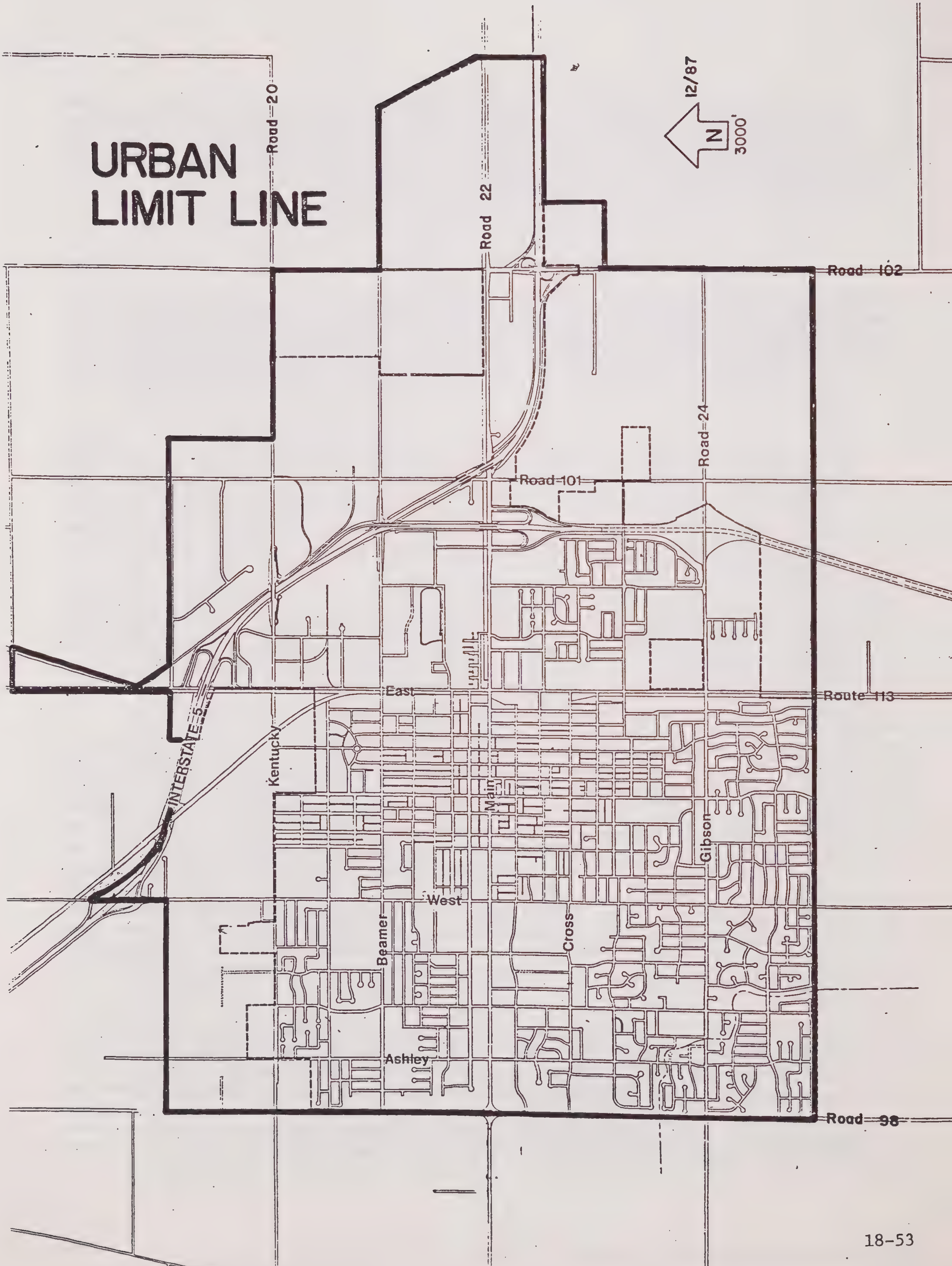
There were a number of planning goals and criteria which were used in developing the City of Woodland's Land Use Element of the Woodland Area General Plan 1979. The major considerations which shaped the plan, however, were capacities of services, orderly growth, concern for preservation of prime agricultural land and the location and availability of land for future urban use.

The Land Use Element acknowledges that the capacity of the sewerage transmission system is the greatest limitation to growth in Woodland. The system has an overall capacity to serve a population of approximately 45,000 persons divided into three trunk lines. The treatment facility, a ponding system, has adequate land area to provided ponding of sewage up to the maximum capacity of the lines provided no new major water-user industries are located in Woodland.

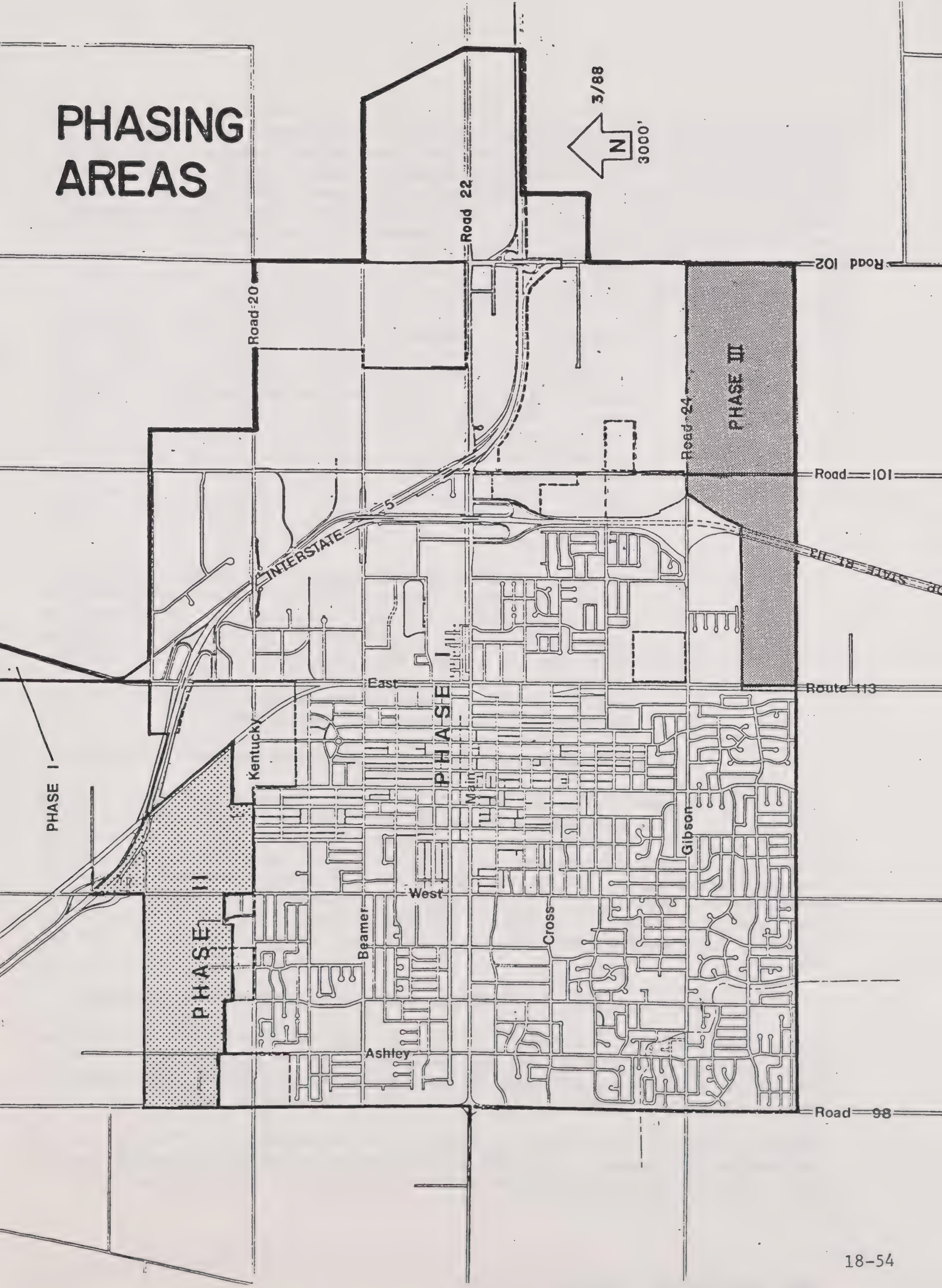
The Land Use Element directs growth to the north of existing development for Phase II residential and provides a Phase III residential-urban reserve area south of Gibson Road. No further urban growth is planned to the west of County Road 98 nor south of the existing southerly City limits. The purpose of this feature of the plan is to help preserve prime agricultural land --the best of which lies to the west and south of the present City limits.

The Land Use Element was developed in cooperation with the County of Yolo to assure compatibility between City and County land use plans and policies. In the area within the City Urban Limit Line (see map on Page 18-53), the City and the County have adopted interdependent plans and policies which prohibit any new urban development until annexation to the City takes place. The interdependent plans and policies were established to define the role of the City as the primary provider of urban services and the County as primary protector of agricultural lands. The City will provide urban services to areas within the Urban Limit Line upon annexation and the County will encourage annexation by prohibiting urban development in the unincorporated area lying within the Urban Limit Line. To date the policy has worked well as the County has continued to implement its goal of protecting agricultural lands.

The Land Use Element directs the timing of residential development by designating three geographic areas within the Urban Limit Line as Phase I, II and III (see Phasing Area Map on Page 18-54). The phasing is based on the availability of key services and attaining the goals of orderly growth and preservation of agricultural land. Phase I encompasses the areas where growth is currently taking place and includes some areas that are currently outside the City limits. Phase II encompasses the area north of Kentucky Avenue.


URBAN
LIMIT LINE
12/87
N
3000'
Road 20
Road 22
Road 102
Road 24
Road 101
Route 113
East
INTERSTATE 5
Kentucky
Main
Gibson
West
Beamer
Cross
Ashley
Road 98

PHASING AREAS



This area is within the City's sewer service boundary but because it is basically undeveloped will require the extension of services, streets and other facilities. The Phase III residential-urban reserve area is located south of Gibson Road in Planning Areas I & J. Sewer line capacities are not adequate to serve this area and this area is not calculated to be necessary to meet the projected population of 45,000 persons for the year 2000. It is an urban reserve area.

The timing directives of the Land Use Element are as follows:

Phase I — Currently being developed.

Phase II — Development of Phase II may be started when: (1) there remains in Phase I vacant residential land equal to three years of development based on the number of housing starts for the previous year (vacant land includes those areas for which no final maps or conditional use permits have been approved) and/or (2) the City Council, through the adoption of a specific plan for services, streets, et cetera determines that Phase II, or a portion of Phase III, is appropriate for development.

Phase III — Development of Phase III shall follow Phase II at a time when: (1) there remains in Phase II, land area equal to three years of residential development, (2) sewers and other services can be provided, (3) the need to develop this area is demonstrated and/or (4) the City Council, through the formal adoption of a specific plan for services and land use for the area, shall determine that Phase III is appropriate for development.

b. Residential Land Use Designations and Density Standards

The City of Woodland has five residential land use designations which are as follows: 1) rural residential (areas outside the Urban Limit Line) 0-2 units per gross acre, 2) low density residential 0-8 units per gross acre, 3) medium/low density residential (applied to older residential neighborhoods near the downtown) —same density range as low density residential and 4) medium density residential 8 to 25 units per gross acre. The upper limits of the density standards have been established to allow for a variety of densities and housing types and to assure that service capacities are not exceeded.

c. Land Inventory by Residential Land Use Designations

Table 18-44 provides an inventory of the vacant land within the City's Urban Limit Line by residential land use designation and by planning area. Table 18-44 also provides an estimate of the potential population and number of housing units that could be built on the vacant residential land.

There is a total of 949 acres of vacant land designated for Phase I and II residential development. The 338 acre Urban Reserve area in Planning Areas I and J south of Gibson Road is not included in the above total acreage as it is

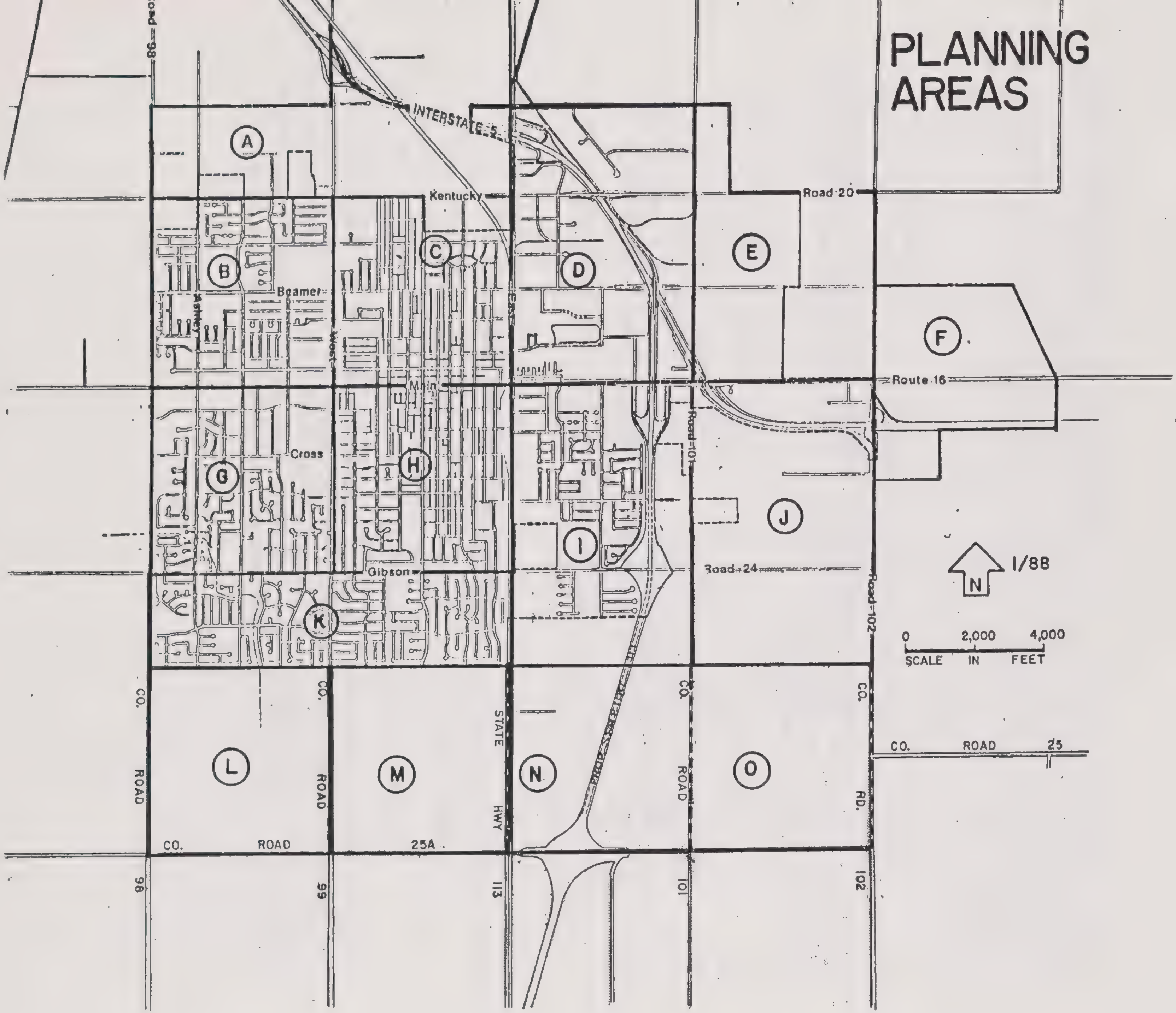
strictly an urban reserve area and will not have City services available for several years. Planning Area J east of County Road 101 is a large area (459 acres) designated for residential development that will require annexation, a specific plan and extension of City services prior to development taking place. The planning areas with the largest acreages of vacant land are Planning Areas J and A (refer to Planning Areas Map on Page 18-58). It is estimated that the supply of vacant land designated for Phase I and II residential development can at build out accommodate 6,000 new units and 10,000 persons. It is further estimated that this supply of vacant land will allow for a total City population of 56,270 persons by the year 2000. The additional residential units would average 685 new units per year through the year 2000 which is well over the average of the past 7.7 years of 380 units per year. There is a more than adequate supply of land set aside for residential development to meet the housing needs of all income groups for the time frame of the General Plan.

TABLE 18-44

VACANT RESIDENTIAL LAND BY PLANNING AREA (MARCH 30, 1988)				
Planning Areas	Vacant Land (Gross Acres)[1]			
	General Plan Designation			Total
Phase I	LDR[2]	MLDR[3]	MDR[4]	
A Phase I	32	0	0	32
B	3	0	2	5
C	13	0	20	33
D	0	0	0	0
E	0	0	0	0
F	0	0	0	0
G	45	0	8	53
H	0	0	0	0
I	63	0	2	65
J[5]	374	0	45	419
K	0	0	0	0
Subtotal	471	0	161	632
Phase II (A)[5]	302	0	40	342
Phase III (I, J)[5]	173	0	20	193
Total	1,005	0	137	1,142

Planning Area	Potential Units/Population General Plan Designation						Total	
	LDR		MLDR		MDR			
Phase I	Units/Pop		Units/Pop		Units/Pop		Units/Pop	
A	192	576	0	0	0	0	192	576
B	18	54	0	0	40	80	48	114
C	78	234	0	0	400	800	478	1,068
D	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0
G	270	810	0	0	160	320	430	1,130
H	0	0	0	0	0	0	0	0
I	378	1,134	0	0	40	80	418	1,464
J	2,244	6,732	0	0	900	1,800	3,735	9,270
K	0	0	0	0	0	0	0	0
Total	3,180	9,540	0	0	1,540	3,080	4,720	14,620

[1]Within Urban Limit Line. Includes vacant land inside and outside present City limits. Does not include vacant lots in completed subdivisions.
[2]Low density residential (0-8 units per gross acre). Potential units/population assumes 3 persons per household and 6 dwelling units per gross acre.
[3]Medium low density residential (same density range as #2 above).
[4]Medium density residential (R-M zone, 8-25 units per gross acre). Potential units/population assumes 2 persons per household and 20 dwelling units per gross acre.
[5]Assumes 70% LDR and 30% MDR by land use designation which corresponds to 1984 SACOG Regional Housing Needs Allocation Plan (ratio of housing by type based on income groups).



PLANNING AREAS
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
INTERSTATE 5
Kentucky
Road 20
Beamer
Ashley
West
East
Main
Route 16
Road 101
Cross
Gibson
Road 24
Road 102
1/88
N
0
2,000
4,000
SCALE IN FEET
CO. ROAD 25
CO. ROAD 98
CO. ROAD 99
STATE HWY 113
CO. ROAD 101
CO. RD. 102
CO. ROAD 25A

From the preceding analysis it is concluded that there is a more than adequate supply of land designated for residential development by the Land Use Element of the General Plan to the year 2000 at an annual growth rate of 2.5%. This conclusion is further supported by the fact that the persons per household and density factors used in computing the units and population are conservative estimates.

3. The Zoning Ordinance

a. Residential Zone Districts

The City of Woodland has four residential zone districts which correspond to the land use designations of the Land Use Element of the General Plan. The zone districts are as follows:

Zone District	Corresponding Land Use Designation
R-1 Single Family Residential	Low Density Residential
R-2 Duplex Residential	Low Density Residential
N-P Neighborhood Preservation	Medium/Low Density Residential
R-M Multiple Family Residential	Medium Density Residential

In addition, the A-1 Agriculture Zone and C-2 General Commercial Zone allow limited residential uses as follows:

A-1	Agricultural Zone	Single Family Dwellings and Mobile Homes on Permanent Foundations.
C-2	General Commerical Zone	Apartments and Multiple Family Dwellings (6 or more units require a Conditional Use Permit).

The P-D Planned Development Overlay Zone may be applied to residential zones to allow for mixed uses, increased densities and lot width and yard deviations where it is found that the total development will be improved by such deviations. This overlay zone has been used increasingly by developers to allow for narrower lots and generally higher densities.

The City of Woodland's minimum lot widths, lot areas and lot area per dwelling unit by zone district are as follows:

Zone	Min. lot area Sq. ft.	Type lot	Min. lot width Feet	Type lot	Area/DU Sq. ft.
A-1	2-1/2 ac	--	125	--	----
R-1 Single Family	6,000	Corner	60	Corner	----
R-1 Single Family	5,000	Interior	50	Interior	----
R-1 Duplex	7,000	Corner	70	Corner	----
R-1 Split Lot Duplex	3,000	Interior	30	Interior	----
(2 adj lots, 1 structure)	4,000	Corner	40	Corner	----
Total	7,000	Corner	70	Corner	----
R-2 Single Family	6,000	Corner	60	Corner	----
R-2 Single Family	5,000	Interior	50	Interior	----
R-2 Duplex	7,000	Corner	70	Corner	----
R-2 Duplex	6,000	Interior	60	Interior	----
R-2 Split Lot Duplex	3,000	Interior	30	Interior	----
	3,000	Interior	30	Interior	----
Total	6,000	Interior	60	Interior	----
R-2 Split Lot Duplex	3,000	Interior	30	Interior	----
	4,000	Corner	40	Corner	----
Total	7,000	Corner	70	Corner	----
N-P (Single Family, Duplex, Split Lot Duplex -- same as R-2 above)					
N-P 2 Single	7,500	Corner	70	Corner	----
N-P Family detached	7,500	Interior	60	Interior	----
R-M Single Family through 6+ units	6,000	--	60	--	1,500

b. Recent Zoning Ordinance Revisions

The City of Woodland has periodically revised and updated its Zoning Ordinance in order to allow for more efficient utilization of residential land and to conform to new State housing legislation. State mandated revisions that have been made include provisions for 1) granny flats, 2) density bonus incentives, 3) mobile home parks in any residential zone, and 4) certified mobile homes on permanent foundations in any residential zone.

Major revisions to the Zoning Ordinance to allow for increased densities and more efficient utilization of residential land include the following:

1. Reduced lot area and lot width requirements for the R-1, R-2, N-P and R-M Zones.

2. Reduced front yard setbacks (with conditions) to 20 feet in the R-1, R-2 and N-P Zones.

3. Reduced rear yard setbacks in the R-1 Zone to 20 feet.

4. Permit duplexes and split lot duplexes on corner lots in the R-1 zone with no special permits or conditions.

5. Permit split lot duplex lots in the R-1, R-2 and N-P Zones with no special permits or conditions.

6. Established a P-D Planned Development Overlay Zone to apply to any zone district to allow for greater design flexibility, mixed uses and variations in density, parking, setbacks, et cetera.

Other housing related Zoning Ordinance revisions include the adoption of a Condominium Conversion Ordinance. The Ordinance requires developers to comply with the following in order for a condo conversion to be approved: 1) secure approval of a conditional use permit, 2) comply with established development standards and fire safety and building codes, 3) provide tenants with prescribed information and notices including an exclusive right to contract for purchase of the dwelling unit, 4) provide and implement a relocation assistance plan and 5) show that there are other comparable units available for tenants to move into.

The Ordinance seeks to assure a safe and high quality dwelling unit for future buyers, protect the rights of existing tenants and provide a reasonable balance of adequate rental and ownership housing on a city-wide basis.

c. Land Inventory by Residential Zone Districts in Phase I

Table 18-45 provides an inventory of land available for residential development in the Phase I area. Phase II was not included in the inventory as it was found that the Phase I area has more than a five-year supply of land. The vacant and approved R-1 and R-1/P-D lots and large vacant R-1 and R-2 parcels in Phase I will be an estimated 421 units or approximately three (3) years of low density residential growth based on 1986-87 average rates of construction (290 units per year). The buildout of the vacant Phase I low density residential areas outside the November 30, 1987 City Limits will produce an estimated 1,828 units or approximately six (6) years of low density residential growth based on 1986-87 average rates of construction. The vacant R-M zoned and proposed medium density residential vacant lots in Phase I will allow for approximately 1.3 years of medium density residential growth based on 1986-87 average rates of construction (360 units per year). The buildout of the vacant Phase I medium density residential areas outside the November 30, 1987 city Limits will produce an estimated 7.7 years of medium density residential growth based on 1986-87 average rates of construction. These estimates of the years of growth based on the supply of land can vary considerably due to construction cycles. There are peaks and valleys that take place especially with apartments. Densities also vary on a project by project basis. A specific plan yet to be prepared will also specify the mix of housing types in the large Phase I area (Planning Area J) east of County Road 101.

Another measure of the adequacy of the supply of residential land is to compare the amount of land zoned and designated for residential uses to an average annual land conversion rate. Table 18-46 indicates the average annual production of residential units by type unit and the average annual gross acres converted to residential land use by type unit. From January 1980 to August 31, 1987 new residential construction converted an average of 45 gross acres per year from nonresidential to residential uses.

Based on the average land conversion rate from January 1, 1980 to August 31, 1987 it is estimated that there is enough land for 16 years of low density (R-1/R-2) development and 16 years of medium density (R-M) development based on the average annual units constructed for low and medium density development and 1) the existing and approved lots for low and medium density development, 2) the units planned for R-M development, and 3) the vacant parcels designated for low and medium density development. These figures are somewhat high due to the use of the average annual rates of construction and land conversion. If the residential construction rates remain at 1985-87 levels then the estimated supply of Phase I land could be reduced by as much as 50 percent.

In summary, there is an ample supply of land (9 years in Phase I) available for residential development through land use planning and zoning. The City will continue to assure the availability of an adequate supply of residential land through periodic updates of the Land Use Element and the Housing Element to the Woodland Area General Plan 1988.

TABLE 18-45

PHASE I RESIDENTIAL LAND INVENTORY
BY ZONE DISTRICT (November 5, 1987)[1]

I. Lands Inside City Limits

A. Vacant R-1 and R-1/PD Zone Lots (Improved Subdivision Lots)

Type Lot	Lots	Potential Units
Single Family Detached	426	426
Single Family Attached	81	81
Split Lot Duplex	12	12
TOTAL	519	519

B. Approved R-1 and R-1/PD Zone Lots (Tentative Map Approvals)

Type Units	Lots	Potential Units
Single Family Detached	295	295
Split Lot Duplex	2	2
TOTAL	297	297

C. Large Vacant R-1 and R-2 Zone Lots

Zoning	Lots	Gross Acres	Potential Units
R-1	7	17.3	87 @ 5 DU/gross acre
R-2	1	2.2	18 @ 8 DU/gross acre
TOTAL	8	19.5	105

D. Vacant R-1/PD Zone Lots Proposed for Medium Density Development (with Conditional Use Permit)

Type Units	Lots	Net Acres	Units Planned
Apartment 3+	2	12	241 (Multiple family)

E. Vacant R-M Infill Lots Considered Available for Residential Development

Status	Lots	Net Acres	Units Proposed	Potential Units
Development pending	2	7.71	116	116
Considered available	17	6.43	13	122
TOTAL	19	14.14	129	238

CONTINUED ....

TABLE 18-45 CONTINUED ....

II. Lands Outside City Limits

A. Vacant and Largely Vacant Low Density Residential (R-1 and R-1/PD Parcels

Project/Gen. Location	Potential Zoning	Gross Acres	Proposed Lots	Potential Units
Liverett Annexation				
Sierra Estates Unit #1	R-1/PD	20.8	143	143 (125 SFD, 18 SLD)
Vacant remainder		13.4	NA	67 @ 5 DU/gross acre
North Park Unit #5	R-1/PD	19.9	106	106
Planning Area J East of CR 101 and North of E. Gibson Road	R-1	R-M Alloca. 306.0	NA	1,530 @ 5 DU/gross acre
TOTALS		360.1	249	1,846

B. Vacant Medium Density Residential Parcels Considered Available for Residential Development

Project/Gen. Location	Potential Zoning	Gross Acres	Potential Units
Palm and Kentucky Annex.	R-M	15.5	295 @ 19 DU/gross acre
Planning Area G East of CR 101 and North of East Gibson Rd.	R-M	131.0 R-M Alloca.	2,489 @ 19 DU/gross acre
TOTALS		146.5	2,784
GRAND TOTALS			6,030 Potential Units of All Types

III. Summary — All Vacant Phase I Residential

Zoning	Lots	Acres Gross/ Net	Units Currently Proposed	Potential Units by Type SFD	SFA	SLD	Duplex	3+
A. Vacant R-1 & R-1/PD Lots	591	--	519	426	81	12	--	--
B. Approved R-1 & R-1/PD Lots	297	--	297	295	--	2	--	--
C. Vacant R-1 & R-2 Lots	8	19.5(G)	--	87	--	--	18	--
D. Vacant R-1/PD Lots Proposed for Medium Density Development	2	12 (N)	241	--	--	--	--	241
Vacant R-M Infill Lots	19	14.1(N)	129	--	5	8	--	225
F. Vacant Low Density Outside City Limits	NA	360.1(G)	249	1,828	--	18	--	--
G. Vacant Medium Density Outside City Limits	NA	146.5(G)	--	--	--	--	--	2,784
TOTALS		526.1(G) 26.1(N)	1,435	2,636	86	40	18	3,250
GRAND TOTALS				6,030 Potential units of all types				

[1]Lands zoned and designated for residential development in Phase I. See Planning Areas Map on Page 18-56.

TABLE 18-46

AVERAGE ANNUAL RESIDENTIAL UNIT PRODUCTION AND AVERAGE GROSS ACRES CONVERTED TO RESIDENTIAL 1980 to 1987 (August 31, 1987)	
I. Average Annual Units Constructed[1]	
A. Single family (all types)	166 units/yr
B. Duplexes	5 units/yr
C. Multiple family residential (3+ units)	204 units/yr
TOTALS	375 units/yr
II. Average Annual Gross Acres Converted to Residential[2]	
A. Acres converted per year - single family all types[3]	33 gross acres/yr
B. Acres converted per year - duplexes[4]	0.6 gross acres/yr
C. Acres converted per year - multiple family residential[5]	11.0 gross acres/yr
TOTALS	44.6 gross acres/yr

[1]Based on building permits issued January 1, 1987 to August 31, 1987 (Table 18-29)

[2]Based on building permits issued and final subdivision maps recorded 1980 to 1987 (Table 18-32).

[3] $\frac{\text{166 units constructed/year}}{\text{5 units per gross acre (Table 18-45)}}$ = 33 gross acres per year

[4]Based on Duplex Subdivision Density of 8 units per gross acre (Dodds Ranch)

$\frac{\text{5 units constructed per year}}{\text{8 units per gross acre}}$ = 0.6 gross acres per year

[5] $\frac{\text{204 units constructed per year}}{\text{19 units per gross acre (Table 18-45) Net acres converted to gross acres}}$ = 11 gross acres per year

d. Availability of Infrastructure and Services

1. Introduction

The City of Woodland, as a "general law" city, has chosen to be a full service city and to provide a broad range of municipal wastewater managment (sanitary sewer system and sewage treatment and disposal), storm drainage, fire protection, police services, parks and recreation, domestic water service, road networks, solid waste disposal and public works services.

The City of Woodland Sphere of Influence Study adopted by the Yolo County Local Agency Formation Commission (LAFCO) on February 28, 1983 indicates that the City is presently providing a high level of services within its boundaries. The study, however, indicates that there are limitations involving the sanitary sewer system, storm drainage and fire protection that may restrict the City from delivering a full and adequate level of urban services to all areas within the Urban Limit Line.

2. The Sanitary Sewer System

The capacity of the sewerage transmission system is the greatest limitation to growth in Woodland. The system has an overall capacity to serve a population of approximately 45,000 divided into three trunk lines with service capacities as follows: Kentucky Avenue trunk line, 15,000; Beamer Street, 15,000 and Gibson Road, 15,000.

The treatement facility, a ponding system, east of the City has adequate land area to provide ponding of sewage up to the maximum capacities of the existing lines provided no new major water-user industries are located in Woodland. Therefore, it is critical that any future growth proposals for Woodland recognize the limited capacities of the sewerage transmission system.

3. Storm Drainage System

The City of Woodland has experienced steady growth over the past decade, which has increased surface runoff and caused some flooding problems in the existing urbanized area. The City is presently served by four main storm drainage trunks carrying surface runoff from the presently developed urban area to the east. These trunks converge at River Road and County Road 103 where the pumping stations pump the flow into the Cache Creek Settling Basin.

Through field reviews, runoff calculations and flow routing, the capacity problems with the existing system have been determined. One of the problems identified is a lack of adequate local collection lines and trunk system and pumping station capacity to collect and dispose of runoff. Another problem is clogging of numerous sections in the system creating localized intersection flooding in the City and extended flooding at the pumping station. The last problem identified addresses the need for extensive maintenance of existing unlined and unfenced open channels.

The trunk system presently serving the largely undeveloped areas to the east and north has sufficient capacity to handle only a portion of the flow under present storm conditions. Future development of this area will cause runoff to greatly exceed the capacity of these existing pipelines and channels.

Some improvements now under consideration are: additional local collection lines, trunk expansion, strategically located detention basins to reduce peak runoff flow rates and alternate systems for disposal of runoff.

4. Fire Protection

Fire protection for the City of Woodland is provided from three fire stations which are manned by a total of 33 suppression personnel divided in three 11-man shifts. To provide coverage and response time for an expanding City boundary, Station Three will be relocated from its present location to a future location further east in the general vicinity of County Road 101 and East Main Street.

The City of Woodland presently has a Class 3 fire protection rating from I.S.O. where Class 1 is the best fire protection and Class 10 would basically provide no fire protection at all.

5. Summary

In summary, the City can provide an adequate level of services for its planned growth. However, limitations in some of these services will place financial constraints on residential growth and require additional development costs and fees. Some areas will require not only the extension of City laterals for water, storm drainage and sanitary sewer but new trunk lines and other related facilities.

e. Fees and Exactions

The City of Woodland has historically kept its fees lower than other jurisdictions in the region. The City recently (June 1987) approved additional increases to its Community Development Department fee schedule (see Table 18-47 on Page 18-68). The fee increases came mainly as a result of Proposition 13 and the need to recover more of the costs of reviewing and processing development proposals and to assure adequate staff levels to process development proposals on a timely and efficient basis. The City of Woodland's adopted policy governing revenues states that:

> "The City shall establish all non-recreation user charges and fees within the Operating Budget at a level sufficient to recapture both the direct and indirect cost of providing the services."

It is probable that the fees will gradually be increased over time due to the fact that they still do not fully recover the direct and indirect costs. Table 18-51 illustrates the 1984 and 1987 fees for Woodland and other jurisdictions in the region.

TABLE 18-47

1987 CITY OF WOODLAND COMMUNITY DEVELOPMENT DEPARTMENT FEE SCHEDULE	
Tentative Parcel Maps	$800
Tentative Subdivision Maps	$1,200 + $15. per lot
Final Parcel Maps	$3,000 + $15. per lot
Final Subdivision Maps	$500 + $15. per lot
Extension of Time	$109
Lot Line Adjustments	$264
Reversion to Acreage	$475
Certificate of Compliance	$199
Use Permit	$406
Home Occupation	$ 37
Variance	$311
Zone Change/PUD Zone Change	$827
General Plan Amendment	$971
Use Permit/PUD Modification	$243
Appeal	$ 50
Initial Study/Assessment	$315
NDEIR	$254
EIR	$1,000 + $35. per hour after 16 hours of review
Condominium Conversion Application	$500 + $35. per hour for each hour spent processing application

The Woodland City Council has been sensitive to balancing the need for fee increases stemming from state mandated requirements and police power authority with other factors such as overall community benefits.

The City fees collected on a particular project will vary depending upon a number of circumstances. A fee structure based on 1987 fees has been developed to denote the fees assessed a 396-unit apartment development and a 141-unit single family development (see Tables 18-48 and 18-49). A fee structure has also been prepared to denote the fees assessed for the development of a single family residence on an existing parcel where all City services exist (see Table 18-50).

Fees collected by the Community Development and Public Works Departments for residential development can be divided into five general categories:

a. Fees charged to cover direct and indirect departmental expenses (staff time or materials, public hearing fees, and public notification requirements);

b. Fees charged to cover the cost of certain projects specific capital improvements (parks, City wells, signs and signals, fire hydrants, etc.).

c. Fees charged to recover the cost of previous capital improvements made by the City;

d. Development Fees (fees collected for area wide long-term capital improvements for storm drainage, sewage treatment, fire protection, City wells, etc.).

e. Permit fees, plan check fees and inspection fees.

The City of Woodland is currently operating under the 1985 Uniform Building Code. Building permit fees charged for new construction are taken directly from the 1985 U.B.C. with no additional charge added. Public Works Department fees have been developed based on staff time, materials and construction costs. Engineering inspection fees are charged based on a flat one percent of total construction costs with adjustments made based on required staff time.

TABLE 18-48

CITY FEES COLLECTED FOR 1987 MULTIPLE FAMILY DEVELOPMENT*

Permits or Fees	Subdivision Assessment	Per Dwelling Unit Assessment
	dollars	
Building Inspection:		
Building Permit	105,886.00	267.39
Plumbing Permit	8,149.00	20.58
Electrical Permit	6,957.84	17.57
Mechanical Permit	4,182.00	10.56
Subtotal	125,174.82	316.10
Engineering:		
Final Map	N/A	
Plan Check	4,304.00	10.87
Inspection Fee	5,304.00	13.39
Street Trees	N/A	
Construction Water	1,767.00	4.46
Property Development Fees ($15,525 per acre)	250,854.00	633.47
Subtotal	262,229.002	1,662.19

*Assumptions:

1. Based on a 396-unit complex with a total of 347,392 square feet.

2. Estimated value is $10,000,000.00.

TABLE 18-49

CITY FEES COLLECTED FOR 1987 SINGLE FAMILY DEVELOPMENT*

Permits or Fees	Subdivision Assessment	Per Dwelling Unit Assessment
	dollars	
Building Inspection:		
Building Permit	162,395	1,151.74
Plumbing Permit	5,156	36.57
Electrical Permit	6,433	45.62
Mechanical Permit	3,525	25.00
Subtotal	177,509	1,258.93
Engineering:		
Final Map	3,115	22.10
Plan Check	3,100	21.99
Inspection Fee	19,839	196.43
Street Trees	3,595	25.50
Construction Water	1,536	10.89
Property Development Fees ($15,525 per acre)	218,035	1,546.35
Subtotal	249,220	1,767.52

*Assumptions:

1. Based on a weighted average of 5 models of single family detached homes.
2. 141 single family homes with square footage ranging from 1,194 to 1,605.
3. Estimated mean home cost $95,457.

TABLE 18-50

CITY FEES COLLECTED FOR 1987 SINGLE FAMILY DETACHED HOME
ON AN EXISTING PARCEL*

Permits or Fees	Per Dwelling Unit Assessment
	dollars
Building Inspection:	
Building Permit	1,151.74
Plumbing Permit	38.00
Electrical Perm	45.48
Mechanical Permit	25.00
Subtotal	1,286.46
Engineering:	
Final Map	0
Plan Check	0
Inspection Fee	0
Street Trees	0
Construction Water	0
Property Development Fees ($15,525 per acre)	0
Subtotal	0

*Assumptions

1. Based on lot size of $15,211.
2. Estimated land value $35,000.
3. Estimated improvement value $65,000.

COMPARISON OF FEES
JANUARY 1984 AND JANUARY 1987

TABLE 18-51

	City of Woodland 1984	City of Woodland 1987	City of Davis 1984	City of Davis 1987	City of Sacramento 1984	City of Sacramento 1987	County of Yolo 1984	County of Yolo 1987	County of Sacramento 1984	County of Sacramento 1987
Use Permit	$150	$ 406	$ 65 Admin 200 Minor 500 Major	$ 300 525 1,375	$ 290	$ 290	30 Minor 75 Admin 150 P.C.	$ 175	$ 548	Depends on Project
Variance	50	311	65 Admin 150 P.C.	300 525	100 Admin 200 P.C.	100	350 P.C.	407	201 Adm 398 P.C.	$1,126 1,407
Zone Change	635	827	700 + $13/lot	2,000 + $70/lot	545	545	750	871	Depends on Project	
General Plan Amendment	691	971	750 + $10/acre	1,350 +	345	345	950 Text 700 Map	1,103 813	1,131	2,814
Tentative Subdivision Map	50 + $5/lot	1,200 + $15/lot	700 + $13/lot	950 + $18/lot	206[a]/ 121[b]/	281[a]/ 196[b]/	N/A	407 + $5/lot	684	1,407
Final Parcel Map	75 + $5/lot	3,000 + $15/lot	500	350 (4 or <) 750 (5 or >)	121	121	N/A	35 + $1/acre	297	180 + cost
Initial Study	75	315	35/hr 3-hr min.	Pre-app. phase $60/hr Prof $45/hr clerical	25	25	50	59	90 + time	132 + time $35/hr
Negative Declaration	100	254	75	100	90 + $42.50/hr	90+ $42.50/hr	75		time	
EIR	310 + consult. fees	1,000 + $35/hr after 30 hrs of review	$35/hr 3-hr min-Planner $20/hr Cler	$60/hr Prof $45/hr Cler.	1,680 + consult. fees	1,680 + consult. fees	500 + cost[c]/	581 + cost	90 + time	Est. fee for each project

[a]/Regular
[b]/Fast Track
[c]/Cost includes consultant plus 28 percent overhead

In conjunction with the preparation of the Woodland Area General Plan 1979, the City prepared a number of detailed studies on the adequacy, level and range of services the City could and should provide. The studies included the City's "Master Environmental Assessment" which indicated all of the impacts that would occur, particularly impacts pertaining to services, if development occurred according to the Land Use Element of the General Plan. These impacts on services were further refined in the General Plan Environmental Impact Report. The City's "Action Plan" and "Development Fee Schedule" then outlined how these impacts on services could be mitigated.

The MEA examined the "worst case" situation that could occur if development occurred according to the General Plan. It concluded that major capital improvments would eventually have to be made in order for the City to continue to deliver a high level of urban services during the 20-year time period of the General Plan. As a result, the City prepared the Action Plan outlining how City services would be furnished to implement the General Plan. The Action Plan, in turn, led to the adoption of the Property Development Fee Schedule (see schedule and map on Page HA-14). The Property Development Fees were developed by determining the various capital improvements needed and then distributed the costs geographically over service areas in order to develop a total dollar cost per acre. The property development fees are required in addition to project specific costs such as street improvements, extension of services or noise walls. The property development fees are based in part on the following considerations: (1) that future development of the City should occur without financial burdens being placed on the present residents of the City and (2) that the costs of future developments should rely in large measure on a "pay as you go" effort by the future users of the new developments.

Waiver or reduction of any of these fees will have either an immediate or a long-term effect on the City's ability to provide services. Waiver or reduction of the fees necessary to cover direct and indirect departmental expenses will affect other projects in that less staff time will be available for such projects or the time necessary to process all permits may be lengthened. Waiver or reduction of the Development Fees will require funds to be diverted from other capital improvement projects, some developers to pay more to offset the waivers or deductions or certain capital improvements to be deferred or eliminated.

f. Development Standards

Development standards in this context refers to the City's requirements for building construction as required by the 1985 Uniform Building Code and 1985 Uniform Fire Code and subdivision improvements as required by the Subdivision Ordinance and the City of Woodland Standard Specifications and the Public Works Policy Manual. The City has no unique or unusual requirements regarding residential development. The standard residential street section is 50 feet with curb gutter and sidewalk on both sides of a 36 foot paved section. The City's Standard Specifications conform to standard engineering practices regarding sewer, water and storm lines, fire hydrants, street lights, City wells, etc.

g. Local Processing and Permit Procedures

The City of Woodland has consistently attempted to process development proposals in a prompt and expeditious manner within the framework of local and state mandated review and processing requirements. The City has implemented a consolidated system for the review and processing of residential development proposals. This system was established with the goal of keeping review and processing times as low as possible. Table 18-52 summarizes the average approval time periods for different types of residential projects. As in any project the City has no control over the time added to the review process by the applicant or his engineer,architect or consultant after initial or subsequent comments by the City that necessitate revisions to plans or related documentation. The City of Woodland places a high priority on fast initial and subsequent review of all types of development proposals. The City is in conformance with AB 941 (which requires and provides coordinated review and decision-making as well as a centralized information service on the status of all residential applications and permits).

h. Utilization of Federal, State and Local Housing Programs

1. Federal Programs

The City of Woodland is currently participating in the U.S. Department of Housing and Urban Development's Community Development Block Grant (CDBG) Entitlement City Program. The City's first Housing Assistance Plan was approved by HUD in February of 1984. The City has administered the following housing related programs since FY-85:

CDBG Rehab Loan Programs: Owner rehab program providing low interest loans for rehab work (21 loans to date, October 1987).

Fair Housing Specialist: Funding for fair housing services one day per week.

Neighborhood Improvements: Brentwood improvements (improvement plans for assessment district), curbs, gutter and sidewalk repair, handicapped ramps.

Wayfarer Center: A grant for two rental units and related administrative costs (housing for homeless).

Senior Housing Site: Grant to pay City fee for senior housing project.

Yolano Village Improvements: Grants for recreation building, security lighting, restrooms and drainage improvements (for public housing project).

The City received $309,000 in funding from HUD during FY 1987.

TABLE 18-52

1987 AVERAGE APPROVAL TIME FOR CITY OF WOODLAND RESIDENTIAL PROJECTS	
Project/Process	Days
Environmental Work	
Notice of Exemption	5
Initial Study	30
Negative Declaration	30
Environmental Impact Report	
Focused EIR	80
Full EIR	90
Annexations	180
Planning Commission Actions[1]	
General Plan Amendment	75*
Rezoning/Prezoning	75*
Planned Development Overlay Zone	75*
Tentative Maps	
Subdivisions	60
Parcel Maps	30
Map Extension	30
Use Permits	30
Variances	30
Condo Conversion	120[2]
Bonus Incentive	60
Appeals to City Council	40
Zoning Administrator	
Certificate of Compliance	14
Variance	21
Lot Size Adjustment	30
Minor Modification to CUP and PD Permits	14
Deep Lot Development	14
Granny Flat	14
Site Plan Review	30
Building Permit Review	
Single Family Detached/Split Lot Duplex	3
Duplex	3
Multifamily (3+ units)	3

Source: Community Development Department and Building Inspection Division 1987.

[1]The CEQA time clock usually runs concurrently with these time lines.
[2]Estimate (no projects to date 3-1-84).
*City Council Action is also required.

The City of Woodland has been and continues to be receptive to proposals for assisted housing. Table 18-30 on Page 18-30 summarizes some of the more recently constructed assisted housing developments in Woodland.

The Yolo County Housing Authority which is located in Woodland administers HUD's Section 8 Programs on a county-wide basis. The program presently includes 460 Section 8 units in Woodland.[1]

2. State Programs

In May of 1982 the City of Woodland issued the building permit for a 44-unit apartment complex which was funded by the California Housing Finance Agency. The units were occupied in November of 1982.

As indicated earlier in the discussion of zoning, the City has revised its zoning ordinance as prescribed by state law to 1) allow granny flats, 2) allow manufactured housing and mobile home parks in any residential zone, and 3) allow density bonuses.

3. County Programs

The City has worked jointly with the County of Yolo to initiate the issuance of mortgage revenue bonds. The mortgage revenue bonds issued to date have expanded the homeownership opportunities for a large segment of first time homeowners that otherwise would have been unable to qualify for homeownership in today's housing market.

4. City Initiated Programs

The City of Woodland has initiated the following actions intended to assure an adequate supply of housing and further housing opportunities for its residents: 1) a stronger code enforcement program has been initiated to direct owners of substandard and unsafe housing units to bring such units up to existing building and health codes, 2) a Blight Ordinance has been adopted which is directed toward insuring the maintenance of residential areas in order to prevent the deterioration of neighborhoods, 3) cooperative agreements have been made with the Yolo County Housing Authority to provide counseling regarding the availability of housing services especially for minorities, the handicapped and female heads of households, and 4) assisting individuals who seek information on housing matters including availability, funding sources and complaints on housing costs or conditions and 5) a Condo Conversion Ordinance has been adopted which protects the rights of current tenants to decent and affordable housing.

i. Article 34

Artlice 34 of the California Constitution, added in 1950, requires government assisted, financed or developed low rent housing developments to be approved by the voters of a city where the development is proposed to be located. In November of 1980 a majority of the voters of the City of Woodland approved Ballot Measure "B" which authorized the development, construction, financing and/or acquisition of rental housing developments for low or moderate income persons including the elderly and handicapped. Article 34 still however places limits on the amount of assisted housing allowed (may not exceed 5% of total dwelling units) and requires that assisted housing be approved at noticed public hearings.

18.0 HOUSING

SOURCES

1. Woodland General Plan, Housing Element 1987

2. 2002 Conference Summary 6/11/86

H O U S I N G   A P P E N D I X

I. RENTAL HOUSING SURVEY

This is a summary of the results of two rental housing surveys conducted to update the City's rental housing data.

The data was obtained from a survey conducted by the City of Woodland Fair Housing Specialist in January 1986. In an effort to obtain information on more recent apartment construction, a second survey was conducted in July 1987 by the Community Development Department.

For both surveys, only those complexes with four or more units under one ownership were surveyed.

The objectives of this study was to:

1) Determine overall vacancy rates of apartments in Woodland.
2) Vacancy rates by size of units (number of bedrooms).
3) Vacancy rates by rental amount per month.
4) Availability of amenities.
5) Services included in rent.

January 1986 Survey

This survey indicated that the City of Woodland has a higher vacancy rate for multiple family units than the regional planned vacancy rate*, partly due to an increase in multiple family unit construction for the previous year (1985). The data indicated a 12.86% overall vacancy rate for 2,681 units surveyed. The vacancy rate had increased significantly from 2% in 1981-82 to 12.86 in 1985-86.

July 1987 Survey

This survey obtained information from 9 recently constructed apartment complexes (post 1985) within the City of Woodland. The results of this survey indicated a 39.1% overall vacancy rate for a total of 792 units surveyed. This relatively high vacancy rate can generally be attributed to two large complexes that have just recently made their units available (Autumn Run, 1180 Matmor Road and Courtside Village Phase II, 255 Sonoma Way). Autumn Run has a total of 296 units with 246 vacant as of August 2. Courtside Village, Phase II has a total of 80 units with 42 units vacant as of July 29.

Excluding these two complexes, the vacancy rate for recent apartment construction is 6.9%.

Combining the January 1986 survey with the July 1987 survey, the overall apartment vacancy rate in Woodland is 18.9%.

*The planned vacancy rate for the region is 2% owner occupied and 6% renter occupied (4% average). Source: Sacramento Area Council of Governments.

VACANCY RATES BY UNIT SIZE AND RENTAL AMOUNT

From the information obtained by the two surveys, it does appear that the City of Woodland has an adequate supply of rental apartment units. It is important, however, to look at the size of units (number of bedrooms) and the rental amount per month of the units which have the highest vacancy rates.

UNIT SIZE

First, let's break down the vacancy rates by size of unit for the 1986 survey. The 2-bedroom units have the highest vacancy rate (222 vacancies for 1105 units = 20%) (See Table B). The next highest vacancy rate occurs for the 1-bedroom units (109 vacancies for 1227 units = 8.8%), followed by the 3-bedroom units (5.%), studio units (3.4%), townhouses (2.7%) and 4-bedroom at 0%. All 4-bedroom units are located at Donnelly Circle and Yolano Village complexes which are administered by the Yolo County Housing Authority. There is a waiting list for occupancy.

For the 1987 survey, the 2-bedroom units also have the highest vacancy rates (296 vacant for 567 units -52.2%) (See Table F). The next highest vacancy rate occurs for the studio units (3 vacant for 36 units = 8.3%) and the 3-bedroom units (1 vacant of 12 = 8.3%). The 1-bedroom units have a 7.5% vacancy rate while there were no 4-bedroom units constructed after the 1986 survey was taken.

RENTAL AMOUNT

Vacancy rates by rental amount is also a useful variable. For the 1986 survey, units with rental amounts between $401-550 per month have the greatest vacancy rate (206 vacant for 418 units = 49.2% (See Table C). The next highest vacancy rate occurs for units having rental amounts between $251-400 per month (146 vacant for 1748 units = 8.3%) followed by units of $100-250 (3%), units of $550 per month or greater per month (0%) and Public housing units (0%).

Looking at the July 1987 survey, the highest vacancy rate occurs for those units having rental amounts of $401-550 per month (297 vacant for 623 units = 47.6%) (See Table G). Units with rental amounts of $251-400 per month have the next highest vacancy rate (13 vacant for 169 units = 7.6%). The 1987 survey found no units in the $100-250 per month range and no public housing units.

SUMMARY OF DATA

Both studies indicate a high vacancy rate for 2-bedroom apartments and apartments with rental amounts in the $401-550 range. These two categories of apartments are the largest contributor to the overall high vacancy rate for both surveys.

Lower vacancy rates occur for townhouses, newly constructed 1-bedroom units and 4-bedroom units. Four-bedroom units have a 1% vacancy rate.

The lower the rental amount, the lower the vacancy rate is for both surveys with one exception. This being the $550+ range for the 1986 survey.

TABLE A

January 1986

RENTAL HOUSING SURVEY

Total number of apartment units	3,205
Number of apartment units surveyed	2,681
Percentage of total units	83.65%
Number of apartment complexes	127
Number of responding complexes	69
Percentage of total complexes responding	54.3%
Total number of vacant apartments	345
Overall Vacancy Rate	12.86%

TABLE B

MONTHLY RENT RANGE, NUMBER AND PERCENTAGE
OF VACANCIES BY UNIT SIZE AND TYPE

JANUARY, 1986

	Number of Units	Vacant Units	Vacancy Rate Rate by Type	Number of Units %	Rent Range	Average Rent
Studios	87	3	3.44%	3.24%		
Furnished	10	0	0	.37	$210-245	$227
Unfurnished	77	3	3.89	2.9	$210-275	$242
1-Bedroom	1,227	109	8.8%	45.7%		
Furnished	173	7	4.0	6.5	$183-330	$265
Unfurnished	1,054	102	9.8	39.3	$142-395	$268
2-Bedroom	1,105	222	20.0%	41.2%		
Furnished	133	6	4.5	4.9	$235-400	$327
Unfurnished	972	216	22.2	36.2	$215-550	$382
3-Bedroom	117	7	5.9%	4.3%		
Furnished	50	6	12.0	1.9	$250-395	$322
Unfurnished	171	1	54.0	6.4	$350-674	$512
4-Bedroom	16	0	0	.60%		
Furnished	0	0	0	0	% of income	
Unfurnished	16	0	0	.60		
Townhouses	129	4	2.7%	5.4%		
Furnished	16	1	6.25	.60	$304-425	$364
Unfurnished	113	3	2.3	4.8	$376-475	$425
TOTAL	2,681	345				

TABLE C

VACANCY BY RENTAL AMOUNT

JANUARY, 1986

Apartment Rental Amount per Month	Number of Units	Percentage of Total	Number Vacant	Vacancy Rate
Assisted Units	183	6.8%	0	0.0%
$100-250	200	7.4%	6	3.0%
$251-40	1,748	65.2%	146	8.3%
$401-550	418	15.6%	206	49.2%
$550+	93	3.5%	0	0%
Public Housing	132	4.9%	0	0%

TABLE D

PERCENT OF APARTMENT COMPLEXES WHICH
HAVE THESE AMENITIES

AMENITIES	
Recreation Room	XXXX
Wall Heat	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Central Heat	XXXXXXXXXXXXXXXXXXXXXXXX
Air Conditioning	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Range	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Dishwasher	XXXXXXXXXXXXXXXXXXX
Refrigerator	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Stove	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Children's Play Area	XXXXXXXX
Carpeting	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Laundry Facilities	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Swimming Pool	XXXXXXXXXXXXXXXX
Disposal	XXXXXXXXXXXXXXXXXXXXXXXXX
Drapes, Window Covers	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Cable Hook-Up	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Att/Detached Storage Sp.	XXXXXXXXXXXXXXXXXXX
	0 10 20 30 40 50 60 70 80 90 100

SERVICES INCLUDED IN RENT

SERVICES	
Water	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Garbage	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Sewer	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Gas (water only)	XXXXXXXXX
Electric	XXXX
	0 10 20 30 40 50 60 70 80 90 100

TABLE 3

July 1987

RENTAL HOUSING SURVEY

Total number of apartment units	864
Number of apartment units surveyed	792
Percentage of total units	91.6%
Number of apartment complexes	10
Number of responding complexes	9
Percentage of total complexes responding	90%
Total number of vacant apartments	310
Overall Vacancy Rate	39.1%

TABLE F

MONTHLY RENT RANGE, NUMBER AND PERCENTAGE
OF VACANCIES BY UNIT SIZE AND TYPE

JULY, 1987

	Number of Units	Vacant Units	Vacancy Rate Rate by Type	Number of Units %	Rent Range	Average Rent
Studios	36	3	8.3%	4.5%		
Furnished	0	0	0	0		
Unfurnished	36	3	8.3%	4.5	$298	
1-Bedroom	133	10	7.5%	16.7%		
Furnished	29	4	13.7%	3.6	$335	
Unfurnished	104	6	5.7%	13.1	$335-425	380
2-Bedroom	567	296	52.2%	71.5%		
Furnished	0	0	0	0		
Unfurnished	567	296	52.2%	71.5	$410-485	$447
3-Bedroom	12	1	8.3%	1.5%		
Furnished	0	0	0	0		
Unfurnished	12	1	8.3%	1.5	$500	
4-Bedroom	0	0	0	0		
Furnished	0	0	0	0		
Unfurnished	0	0	0	0		
Townhouses	16	0	0	2.0%		
Furnished	0	0	0	0		
Unfurnished	16	0	0	2.0	$480	

TABLE G

VACANCY BY RENTAL AMOUNT

JULY, 1987

Apartment Rental Amount per Month	Number of Units	Percentage of Total	Number Vacant	Vacancy Rate
Assisted Units	35	4.4%	0	0.0%
$100-250	0	0%	0	0.0%
$251-400	169	21.3%	13	7.5%
$401-550	623	78.6%	297	47.6%
Public Housing	0	0%		0%
Total Units	827		310	

TABLE H

PERCENT OF APARTMENT COMPLEXES WHICH
HAVE THESE AMENITIES

JULY, 1987

AMENITIES	
Recreation Room	XXXXXXXXXXXXXXXXXXXXXXX
Wall Heat	XXXXXXX
Central Heat	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Air Conditioning	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Range	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Dishwasher	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Refrigerator	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Stove	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Children's Play Area	XXXXXXXXXXXXXXXXXX
Carpeting	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Laundry Facilities	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Swimming Pool	XXXXXXXXXXXXXXXXX
Disposal	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Drapes, Window Covers	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Cable Hook-Up	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Att/Detached Storage Sp.	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
	0 10 20 30 40 50 60 70 80 90 100
	percent

SERVICES INCLUDED IN RENT

SERVICES	
Water	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Garbage	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Sewer	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Gas (water only)	XXXXXXXXXXXXX
Electric	XXXXXX
	0 10 20 30 40 50 60 70 80 90 100
	percent

II. NET HOUSING UNIT NEED

The following methodology is drawn from the Housing Element Manual, State of California Department of Housing and Community Development, March 1973:

1. Projected Households July 1, 1990 (1984 SACOG Regional Housing Needs Allocation Plan)

TABLE II-A

Income Category	Jan. 1, 1983	% of 1983 Total	July 1, 1990	% of 1990 Total	'83-'90 Increase	% of Increase
Very low	3,052	27.3	3,966	28.5	914	33.7
Low	2,023	18.1	2,570	18.5	547	20.1
Moderate	2,560	22.9	3,071	22.1	511	18.8
Above mod.	3,543	31.7	4,287	30.9	744	27.4
TOTAL	11,178	100.0%	13,894	100.0%	2,716	100.0%

2. Needed Units by 1990

$$OH \cdot \frac{1}{1-V/S} + RH \cdot \frac{1}{1-V/R} \cdot \frac{1}{1-OV} = \text{Units Needed}$$

OH = Owner households
RH = Renter households
OH = 1980 homeownership rate of 61.5% x (13,894) = 8,545
RH = 1980 renter rate of 38.5% x (13,894) = 5,349
V/S = Desired owner vacancy rate = 2%
V/R = Desired rental vacancy rate = 6%
O/V = Other vacant rate from 1980, U.S. Census = 1.42%

$$8{,}545 \cdot \frac{1}{0.98} + 5{,}349 \cdot \frac{1}{0.94} \; \frac{1}{0.986} = 14{,}487 \text{ total units projected for 1990}$$

14,487 (Projected units in 1990) - 11,757 (Existing units in 1983) = 2,730

2,730 units of new construction needed

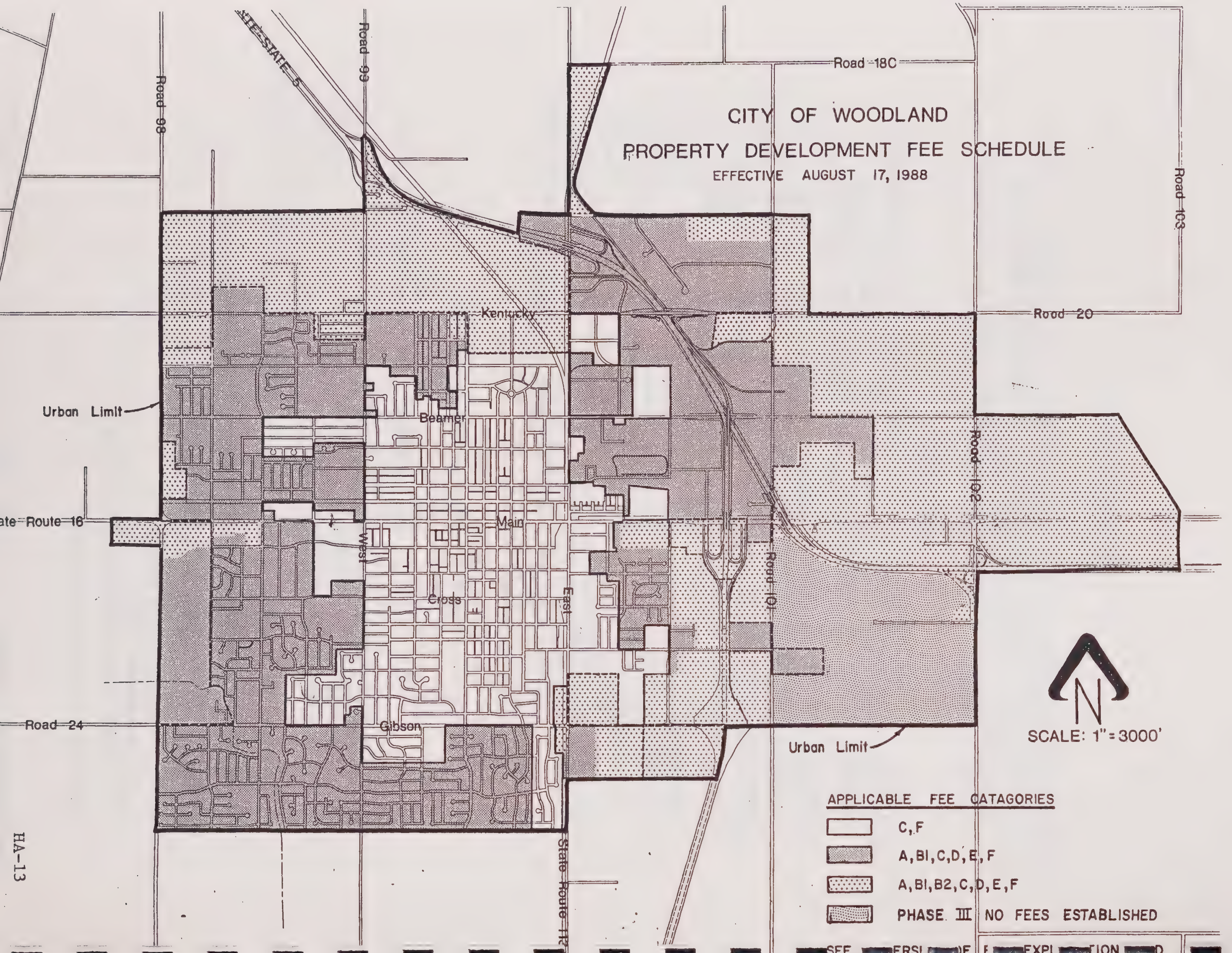
2,730/7.5 = 364 units per year to July 1, 1990.

10 units/year removed from stock from January 1972 to December 31, 1983.

75 units will be removed from 1983 - 1990

2,730	new construction needed
+ 75	replacement units
2,805	total units needed by July 1, 1990

2,805/7.5 = 374 total units/year


CITY OF WOODLAND
PROPERTY DEVELOPMENT FEE SCHEDULE
EFFECTIVE AUGUST 17, 1988
Road 18C
Road 98
Road 99
STATE 5
Road 103
Road 20
Kentucky
Urban Limit
Beamer
State Route 16
Main
West
Road 102
Road 101
Cross
East
Road 24
Gibson
Urban Limit
SCALE: 1" = 3000'
N
State Route 113
APPLICABLE FEE CATAGORIES
C, F
A, B1, C, D, E, F
A, B1, B2, C, D, E, F
PHASE III NO FEES ESTABLISHED

CITY OF WOODLAND

PROPERTY DEVELOPMENT FEE SCHEDULE

August 17, 1988

TYPE OF IMPACT	DESCRIPTION	FEE PER ACRE
A. Traffic Congestion	Residential	
	Single Family	$ 693/DU
	Multi-Family	485/DU*
	Commercial	
	Service	$ 11,781/Ac
	Neighborhood/Central	17,325/Ac
	Highway	17,325/Ac
	Industrial	
	Mixed Use	$ 11,781/Ac
	Warehousing/Manufacturing	4,851/Ac
B. Storm Drainage	1. Cost of oversize trunk mains	$ 1,115/Ac
	2. Cost of system expansion	7,320/Ac
C. Domestic Water	Residential	
	Single and Multi-Family	$ 263/DU*
	Industrial/Commercial	1,050/Ac
D. Fire Protection	Residential	
	Single Family	$ 163/DU
	Multi-Family	163/DU*
	Industrial/Commercial	1,500/Ac
E. Public Facilities		$ 3,465/Ac
F. Sanitary Sewer	Residential	
	Single Family	$ 1,440/DU*
	Multi-Family	1,010/DU*
	Commercial/Industrial	1,440/SFDU Equivalent*

* This fee is due at time of issuance of building permit.

Note 1: These fees are interim fees only. A new fee schedule is expected to be adopted in the Spring of 1989. All projects will pay the fees as shown above at this time, and will be subject to the final fee schedule when it is adopted. The developer will be billed if the new fees are higher, or sent a refund if the new fees are lower.

TABLE III

BUILDING PERMIT ACTIVITY - MULTIPLE FAMILY RESIDENTIAL (3+ UNITS)							
Year	Month Issued	Project Name or Owner/Contractor	Location	Number of Units	Number of Bedrooms	Net Acres	Number of Parking Spaces
1975		No Multiple Family (3+ Units) Permits Issued in 1975					
1976	Mar	Casa Bella	539 Cleveland St.	6	2 Br.	0.26	9
	Dec	Fair Plaza East	35 W. Clover St.	17 4-plex 18 units	1 Br.	4.1	46 Long term (tenants) 25 Short term (guest and employees)
1977	Apr	G.O. Perrin	648 California St.	3-plex	1 Br.	0.16	5
	May	M. Volante	741 Sixth St.	4-plex	3 Br.	0.14	6
	May	Shade Tree Village (2 sites)	220 California St.	60	28 - 1 Br. 32 - 2 Br.	2.4	89
			90 W. Elliot St.	50	24 - 1 Br. 26 - 2 Br.	2.4	78
	July	Guardian Oaks Addition	655 Cottonwood St.	12	2 Br.	0.27	18
	Nov	M. Volante	743 Sixth St.	4	3 Br.	0.15	6
	Dec	Lone Palm	433 West St.	8	8 Studio	0.21	12
1978	Mar	Courtwood	216 W. Court St.	112	68 - 1 Br. 44 - 2 Br.	4.06	166
	Apr	Oeste de California	518 California St.	14	6 - 1 Br. 8 - 2 Br.	0.88	28
	Apr	Redwood Manor	132 Fifth St.	12	1 Br.	0.32	18
	June	DeKreek Const.	57 Fifth St.	4	3 Br.	0.39	8

TABLE III CONTINUED.....

BUILDING PERMIT ACTIVITY - MULTIPLE FAMILY RESIDENTIAL (3+ UNITS)							
Year	Month Issued	Project Name or Owner/Contractor	Location	Number of Units	Number of Bedrooms	Net Acres	Number of Parking Spaces
1979	Apr	Summertree Apts.	601 Community Lane	93	Elderly - 63 - 1 Br. (8 H.C.) 5 - 2 Br. Family - 10 - 2 Br. (3 H.C.) 15 - 3 Br.	8.6	52 Elderly 46 Family
	July	Alderwood Apts.	15 Woodland Ave.	20	7 - 1 Br. 13 - 2 Br.	1.01	30
1980	Feb	Westwood Apts	260 W. Court St.	92	56 - 1 Br. 6 - 2 Br.	3.43	140
1981		No Multiple Family (3+ Units) Permits Issued in 1981					
1982	May	Cherry Glen Apts.	762 W. Lincoln Ave.	44	32 - 2 Br. (2 H.C.) 12 - 3 Br.	2.3	66
1983	Apr	The Monterey Apts.	280 W. Court St.	70	2 Br.	3.02	105
	July	Villa Lucca Apts.	404 W. Cross St.	28	1 Br.	0.98	47

TABLE III CONTINUED.....

BUILDING PERMIT ACTIVITY - MULTIPLE FAMILY RESIDENTIAL (3+ UNITS)									
Year	Month Issued	Project Name or Owner/Contractor	Location	Number of Units	Number of Bedrooms	Net Acres	Net Units /Acre	Gross Units /Acre	Number of Parking Spaces
1984	Apr	Community Lane Apts.	435 Community Lane	44	10 - 1 Br. 34 - 2 Br.	8.6 1.79	24.6	20.5	66
	Nov	Courtside Village I	320 W. Court St.	70	16 - 1 Br. 40 - 2 Br. 14 - Twnhs.	3.1	22.5	19.1	105
	Nov	Moria Gardens (Devco)	1231 Gary Way	48	16 - 1 Br. 32 - 2 Br.	1.8	26.2	21.8	72
1985	May	Cracchiolo 4-Plex	438-498 Thomas St.	24	2 Br.	1.7	13.0	11.5	42
	May	Heritage Oaks	186 Muir St.	120	40 - 1 Br. 80 - 2 Br.	4.72	25.4	21.2	187
	Aug	Pebblewood Apts.	260 California St.	38	8 - 1 Br. 30 - 2 Br.	1.22	31.4	26.0	64
	Sept	The Village	555 Matmor Road	192	56 - 1 Br. 136 - 2 Br.	8.17	23.5	19.5	288
	Oct	The Greens	150 Lincoln Ave.	53	29 - 1 Br. 24 - 2 Br.	1.68	31.5	26.0	
	Oct	Woodland Manor	127 Main St.	50	14 - 1 Br. 36 - Studio	1.32	37.9	31.6	24
1986	Mar	Autumn Run	1180 Matmor Road	396	2 Br.	18.3	21.6	18.0	601
	Apr	Walnut Woods	512-518 Community Lane	34	26 - 1 Br. 8 - 2 Br.	1.05	32.1	26.9	44
	June	Woodside Glen Apts.	311 North College St.	72	20 - 1 Br. 52 - 2 Br.	2.72	26.47	22.1	123

TABLE III CONTINUED.....

BUILDING PERMIT ACTIVITY - MULTIPLE FAMILY RESIDENTIAL (3+ UNITS)									
Year	Month Issued	Project Name or Owner/Contractor	Location	Number of Units	Number of Bedrooms	Net Acres	Net Units /Acre	Gross Units /Acre	Number of Parking Spaces
1986	July	Eastwood Triplexes	1233-1251 Alice St.	12	3 Br.	1.2	10.0	8.3	31
	Sept	Fowler Commons	135 Third St.	9	8 - 1 Br. 1 - 2 Br.	.25	36.6	30.0	9
		Courtside Village II	320 W. Court St.	80	24 - 1 Br. 56 - 2 Br.	3.1	25.8	21.1	120
	Dec	Cottonwood Meadows	120 N. Cottonwood St.	47	1 Br.	1.48	30.4	25.3	17
1987	Aug	Roth	25 W. Lincoln Ave.	20	1 Br.	.63	31.8	26.0	10
		Lincoln Gardens	836 W. Lincoln Ave.	66	1 Br.	2.3	28.7	23.9	27
	Dec	Passkey	548 California St.	6	4 - 1 Br. 2 - 2 Br.	.23	26.1	21.7	10
1988	May	B. Kanada	422-426 Grand Ave.	6 (3 dplx)	6 - 2 Br.	.42	14.3	11.0	13
	Oct	Las Palmas	839 Lincoln Ave	128	50 - 1 Br. 42 - 2 Br. 36 - 3 Br.	9.76	13.1	10.9	239
	Oct	Courtside Village Tower (Elderly Only)	320 W. Court St.	102	102 - 1 Br.	1.56	65.4[1]	54.5[1]	34

[1]Density of this project was averaged with Courtside Village Units I and II for compliance with General Plan Denisty Requirements.

Transportation/Circulation

19. TRANSPORTATION/CIRCULATION

Background Information

Throughout history, circulation has played a major role in community development. The early settlers in Woodland traveled by foot, carriage, cart, horse, or other primitive means. In 1869 the California Pacific Railroad extended tracks from their Sacramento to Vallejo line, northward through what was then Davisville, via Woodland to Yuba City. The railroad was the major means by which people traveled long distances. Cargo that was hauled to Sacramento was often loaded on barges to be shipped down the Sacramento River to San Francisco.

On July 4, 1911 the Sacramento Northern Electric Railroad began service from Woodland to Sacramento. The train traveled at the unprecedented speed of 55 miles per hour. The local train route, which ran down Main Street and stretched from Beamer to Pendegast along Second Street, was abandoned in 1945.

Since World War II the dependence on the automobile and its role in daily activities of the community has steadily increased. Statistics indicate that the trip ratio for a single family dwelling is 11+ trips per day. The circulation system has become a major physical component of the community occupying up to 30% of the land area.

Nationwide transportation studies have shown that in the average American city, approximately 60% of all personal trips are made to and from work. Approximately 15% of the trips are made for social or recreational purposes, 10% are made for shopping, and five percent for business. The remaining 10% are made for other purposes, primarily education.

As indicated in the Circulation Element of the Policy Plan, the type of street is determined by its width and use.

The construction of new streets is generally undertaken by or in conjunction with the City. Where land development is involved, the developer finances the initial construction of streets adjacent to his development. Other street construction is funded through the Federal Aid to Urban Streets Program (FAU) and/or state gas tax monies. The federal funds may be used only for selected streets. The state has two funding programs; one applies only to construction on the select street system, the other may be used for construction or maintenance of any street.

The following section deals with the existing circulation system through a discussion of the transportation modes.

A. EXISTING CIRCULATION SYSTEM

Mode/Path/Facilities

The existing transportation modes used in Woodland are the automobile, public transit (bus, mini-trans, and taxi), bicycle, pedestrian, truck, rail and air. Each of these modes will be discussed in relation to its path and terminal facilities.

A.1 THE AUTOMOBILE

Mode: The automobile serves as the principal mover of goods and people in Woodland due to its convenience and accessibility. These factors coupled with our dependence on the automobile seem to outweigh the disadvantages of air pollution, noise, fuel consumption and operational and maintenance costs. However, future trends may dictate a shift in the reliance on the automobile as the primary mode of transportation.

Path: Roadways provide the major paths for the automobile. General types of paths include minor, collector and major arterial streets, highways, freeways, and rural roads. Right-of-way widths for the City are indicated in the Circulation Element.

The designation of streets, the system of major arterials, collectors and minor streets is based upon 1) the travel needs of auto, truck, and transit uses; 2) the network pattern of existing streets; 3) the access needs of adjacent land development.

Woodland's major street pattern was developed on a grid system oriented in north-south and east-west directions. Major arterial streets are located at one-mile intervals with the exception of Court Street which serves the downtown-commercial area. Collector streets are generally located at half-mile intervals between the major arterial streets although additional collector streets have been designated at approximately quarter-mile intervals in most areas of the community.

Appendix 19-1 provides an analysis of existing transportation conditions for the urban limit line area.

The lifestyles and land use patterns of Woodland have developed around the automobile. It remains our primary mode of transportation. Adequate terminal facilities should be available to accommodate the automobile without compromising the character of the community.

Streets which provide access to the County and regional circulation system should be upgraded to provide for a continuing system in and around Woodland and beyond to serve all modes which utilize roads. In areas where the City and County street widths do not coincide, a workable plan to align the streets should be developed.

A particular area of concern is the circulation in the downtown area. The streets have remained basically unchanged while the City continues to grow. Congestion is becoming a more frequent occurrence. In order to address the congestion problems in the downtown, the City retained Omni-Means, Engineers and Planners, to prepare a Downtown Parking and Circulation Study. That study was completed in 1984 and the City is in the process of implementing proposals outlined in the study.

The aesthetic qualities of Woodland should not be ignored in upgrading the City's circulation system. Tree lined streets provide character to the community. Special attention should be given to preserving the stately specimen Valley Oaks in Woodland. Existing street trees should be retained wherever possible. Where it becomes necessary to remove trees such as in street widening, new trees should be planted along the right-of-way and allowed to adapt to the area prior to removal of the old trees. Medians and right-of-way between noise walls and the street should be landscaped.

Terminal Facilities: Private and public off-street parking areas and curb side parking provide terminal facilities for the automobile. These facilities include parking in commercial areas, adjacent to places of employment and amusement and in residential areas. The City's Zoning Ordinance presently requires off-street parking facilities for any new structure or for locations where major alterations are proposed for existing structures. The number of required spaces is dependent upon the size and use of the structure. Structures within Parking District No. 1 are exempt from parking requirements. Parking facilities for this area are provided by City parking lots. Figure 19-1 shows the area of Parking District No. 1 and the location of the City parking lots. It should be noted that the District Bonds will be paid off in 1989. The City is considering the formation of a new district for additional off-street parking lots in the downtown with the requirement that all new development within the district contribute a pro rata share for the new facilities in lieu of providing spaces.

B. PUBLIC TRANSIT

Mode: Public transit in Woodland refers to buses, the mini-trans systems and taxi service.

Three public bus lines serve Woodland: The Yolo County Mini-Trans, Yolobus and Greyhound. Smaller scale transit systems in Woodland include cab services, Community Care Car, and Woodland Handi-Van.

The Yolo County Mini-Trans began operation in 1974 in response to the transportation needs of senior citizens in the rural areas of Yolo County. The system is designed to serve senior citizens and other persons without transportation means. It transports residents to and from medical facilities, other bus connection stops, major shopping centers, etc. The routes bring residents into Woodland from the outlying areas in the morning and return them home in the afternoon. The Yolo County Mini-Trans currently provides a limited bus service to Woodland residents. The bus travels a fixed loop route through the City under varying schedules depending on the day of the week.

Yolobus serves Woodland on weekdays between Woodland, Davis, West Sacramento and Sacramento plus two express trips to Downtown Sacramento.

The Greyhound Bus Line provides service through to areas north and south with connections to numerous destinations throughout the United States. It also provides a package transport service.

The Community Care Car is an on-call transportation service for senior citizens and handicapped persons in the Woodland area. This system operates


Oak
Lincoln
Main
Court
North
Walnut
Elm
College
First
Second
Third
Fourth
DISTRICT NO. 1
CITY PARKING LOTS
LEGEND
1 INCH
1000 FEET
OFF - STREET
PARKING

FIGURE 19-1

as a dial-a-ride service for which a call must be placed one day in advance. It is a volunteer system. The bus is donated and the drivers upaid. No fare is charged but donations are accepted.

Woodland Handi-Van provides local door-to-door wheelchair accessible service to Woodland's disabled community. According to the 1980 Census, there were 571 Woodland residents who have a disability which could require public transportation. Additionally, there were 826 households without automobiles, 4,430 individuals 60 and over and 2,427 households below the $5,000 poverty level.

Private companies also provide typical taxi service for the area.

The following is a summary of employment for Yolo County. The source is the 1980 Census for the County.

TABLE 19-1

PLACE OF WORK FOR YOLO COUNTY

Yolo County	Total No. of Employees	Davis	Woodland	Remainder Yolo County
Davis	16,320	9,580	559	2,236
Woodland	11,623	847	7,813	1,514
Winters and Vicinity[1/]	1,288	129	68	712
Balance of Unincorporated	13,925	1,139	1,193	5,047
Total	43,156	11,695	9,633	9,509

[1/]Tract 113

NOTE:
These are the geographic locations of the plant, office, store or other establishments where the person worked most of the last week before Census Day. It is ascertained for persons at work during the last week, including both civilian employed and Armed Forces at work and tabulated for persons 16 years old and over.

Terminal Facilities: Bus transit facilities include bus stops as well as the bus terminal or depot. The stops for the mini-trans and Yolobus are located along the routes to serve the riders. The Greyhound Bus Line provides for passengers at its depot at 420 East Street.

C. THE BICYCLE

Mode: The bicycle is becoming an increasingly popular mode of transportation for short commutes and in-town mobility. As a mode of transportation, it has advantages in terms of cost, maintenance, noise, air pollution and improving the physical health of the rider. The bicycle is generally not a feasible mode for long distance travel nor is its use preferred in bad weather.

Path: The path of the bicycle is generally located along roadways or specially designated bike routes.

At present there are several designated bike routes in Woodland. The typical arterial and collector street curb-to-curb widths provide a five-foot area in each direction that can be designated or used as bike lanes. The Circulation Element of the Policy Plan shows the City's existing and planned bike lanes in relation to the Yolo County bike routes.

Terminal Facilities: Bike racks provide parking area for bikes. These are generally available at schools and parks and are provided at other recreation and commercial facilities in the community.

D. THE PEDESTRIAN

Mode: This mode is most often used in conjunction with the automobile or another mode of transportation.

Path: The path of the pedestrian is generally along sidewalks within street rights-of-way and crosswalks. Pedestrian walkways separated from the street right-of-way, such as through parks, provide paths for pedestrians.

The City standards require sidewalks along all improved streets except in the industrial areas. Handicap ramps are required (at intersections) in new subdivisions and the City is reconstructing intersections in the older part of town with handicap ramps.

Terminal Facilities: Terminal facilities for the pedestrian include any origin and destination point such as homes, shops, job locations, parking areas for the automobile, bus stops and recreation facilities.

E. TRUCKS

Mode: Trucks are the major mode for the transport of goods to and from Woodland. Woodland is the primary trucking center for the agricultural industry in Yolo County and generates high volumes of truck traffic during the harvest seasons. In recent years, large distribution warehouses have located in the City.

Path: The truck routes are shown in the Circulation Element of the Policy Plan.

Terminal Facilities: The major terminal facilities in Woodland are the trucking company base facilities, inspection stations, agricultural processing plants and other distribution warehouses. These facilities are located in the industrial zone which is located in the northeast quadrant of the City. The location of these facilities is shown in the Circulation Element of Policy Plan.

F. RAIL

Mode: The railroad provides transportation for people and goods in the Woodland area. The rail lines are the Southern Pacific Transportation Company and the Sacramamento Northern Railway (Union Pacific-Missouri Pacific). Southern Pacific operates approximately ten freight trains and two passenger trains through Woodland each day. The Sacramento Northern generally operates one freight train per day.

Path: The mainline and spur tracks provide the path for trains. The Southern Pacific north/south mainline parallels East Street through Woodland as indicated in Figure 19-2. The adjacent land uses along the tracks are mostly light industrial with residential uses adjacent to the tracks south of Gibson Road. East Street and its commercial and industrial land uses lie to the east of the tracks. North of Beamer Street the railroad spurs extend into the industrial area.

The Sacramento Northern's tracks lie adjacent to and north of East Main Street with spurs extending north. The Sacramento Northern serves Woodland and the Sacramento Port and is operated by the Union Pacific Company in Sacramento. Land uses adjacent to the Sacramento Northern tracks are industrial and agricultural.

Separated grade crossings at the north-south railroad lines need to be considered. Kentucky Avenue, Beamer Street, Main Street and Gibson Road are the major streets that could incorporate separated grade crossings at the north-south railroad lines to provide east-west traffic flow for the City. A future major street south of existing City Limit should also be considered as a separated grade crossing.

Terminal Facilities: Railroad yards are the major terminal facility for railroads. Southern Pacific has a small switching yard at the southwest corner of Main and East Streets. Trains operating in the industrial area use this facility. The area northeast of Main Street and East Streets is the end-of-the-line for the Sacramento Northern and is used as a temporary car storage and loading area. Passenger service is available in Davis at the Southern Pacific Depot at Second and H Streets.

G. AIR

Mode: Air transportation includes the use of general aviation, commercial and military aircraft. General aviation meets both recreation and business needs. Commercial air transportation provides transportation for people and goods. Military aircraft operate in capacities related to national defense.

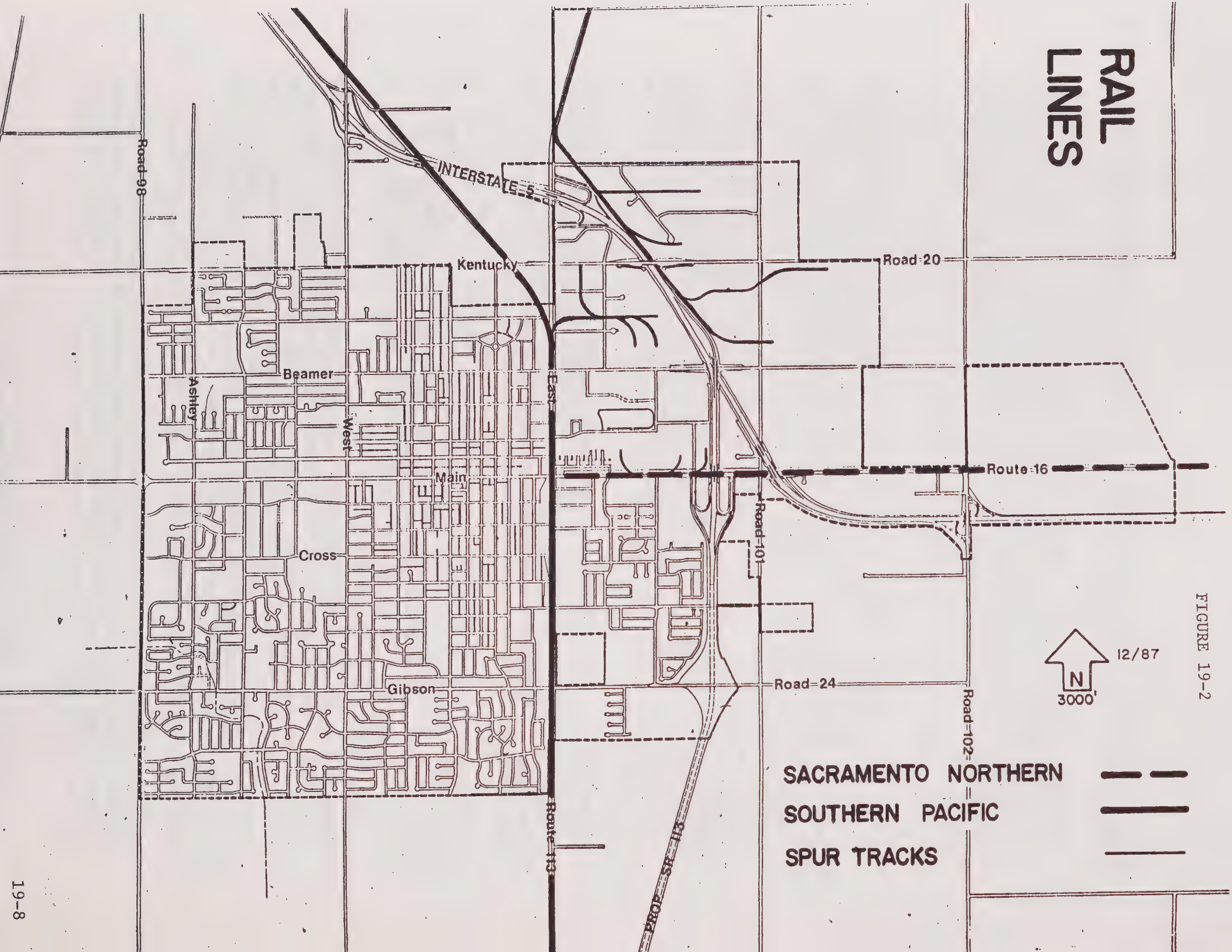

RAIL LINES
Road 98
Ashley
Beamer
West
Kentucky
INTERSTATE 5
Main
Cross
Gibson
East
Route 113
Road 20
Route 16
Road 101
Road 24
Road 102
PROP. SR 113
12/87
N
3000'
SACRAMENTO NORTHERN
SOUTHERN PACIFIC
SPUR TRACKS

FIGURE 19-2

Crop-dusting operations are common in the agricultural area surrounding the City.

Path: The path of aircraft includes ground operations around airports and air operations in general airspace and through air corridors.

Terminal Facilities: Terminal facilities for air transportation are airports, landing strips, hangers and tie-down areas. In the Woodland area, the general aviation airports are the Watts airport five miles west of Woodland on State Route 16 and the Yolo County Airport in the vicinity of County Roads 95 and 29. A number of small landing strips primarily serving agricultural crop duster bases are located around the Woodland area.

Sacramento Metropolitan Airport is located 11 miles east of Woodland. This is the major jet terminal facility in the Sacramento area. The nearest military airports are Mather and McClellan Fields in Sacramento, Travis Air Force Base in Fairfield and Beale Air Force Base in Marysville.

H. YOLO COUNTY SHORT RANGE TRANSIT PLAN

The first transit plan was prepared for Yolo County in 1979. It was a five year transit development program which examined the various systems and made recommendations concerning possible service improvements and future financing. In 1983 an update of this plan was prepared. It was a short range plan for all transit service in Yolo County.

This plan is a more extensive look at the systems administered by the Transit Development Coordinator of Yolo County only. The purpose of this Short Range Transit Plan (SRTP) is to update the original plan and to make specific service and financial recommendations for FY 1987/88 through FY 1991/92. It is a management tool for Yolo County which satisfies state and federal planning requirements as well as the Transportation Development Act (TDA) guidelines.

H.1 EXISTING SYSTEMS

The transit systems discussed in this report are YOLOBUS, Minitrans, Handi-Van and West Sacramento Paratransit. All systems are managed by the Yolo County Transit Coordinator.

YOLOBUS provides bus service linking Woodland, Davis, West Sacramento and downtown Sacramento. It operates under a joint powers agreement with the cities of Davis, Woodland and West Sacramento. Six routes operate Monday through Friday from 6:15 A.M. to 8:30 P.M. Modified service is offered on the weekends. A trial Southport service was begun in May.

Minitrans provides fixed-route public transit service to rural Yolo County. All routes end in Woodland. Trips are made either two or three days a week to Esparto, Dunnigan and Knights Landing. Daily trips are made between West Sacramento and Woodland. There is no weekend service.

Handi-Van, an accessible door-to-door demand responsive transportation system for the City of Woodland began service on May 12, 1986. It was designed to provide transit service to qualified frail and disabled residents who cannot

use other forms of transportation. The same contracting firm which operates YOLOBULS, Transit Contractors, also runs Handi-Van. After operating only one year, Handi-Van carried 54 percent more passengers than its one year goal. The dial-a-ride service has proved so successful that city and county staff are looking into ways to handle times when demand exceeds supply.

H.2 UNMET TRANSIT NEEDS

The unmet transit needs identified in this plan were derived from public hearings on unmet transit needs, an analysis of Yolo County socio-economic information, ridership data, surveys and interviews with local officials. The following were identified as needs specifically for Woodland:

a. Saturday service to Woodland

b. More direct service to Yuba College and County Fair Mall in Woodland and the Riverbend Senior Manor in West Sacramento

c. Integrating the GAIN program into the transit systems

d. Developing a park and ride program for Yolo County

e. Developing a plan for service expansion for Handi-Van

H.3 TRANSIT FINANCING

Revenue sources discussed in this section appear to be adequate to meet the projected expenditures of all systems during the five years in consideration. In order to finance any new service, the local jurisdiction in which the service would occur would have to approve and finance the proposed new service. Thus, new service and capital projects are dependent upon the agreement of the jurisdiction involved and the amount of money that jurisdiction has available to spend.

Each jurisdiction spends a different proportion of its TDA funds on transit. As mentioned earlier, Davis spends the highest proportion on transit, 95.5 percent. Thus, Davis has little money left to add additional bus service. The City of West Sacramento spends 65 percent of its TDA money on transit while Woodland and Yolo County spend approximately 25 percent each on transit. Winters, currently, does not spend any of its allocation on transit.

The decision by any of the jurisdictions to devote more TDA funds to transit means less money to be devoted to streets and roads maintenance and construction. Thus, proper justification of additional transit service is necessary to obtain approval.

H.4 RECOMMENDATIONS

A number of transit service improvements have been considered during the development of this plan. The improvements were designed to meet the demands for service identified in the unmet needs section. These alternatives were examined to determine which ones best serve those unmet needs which are reasonable to meet. The recommendations balance the unmet needs with such

factors as equity, timing, feasibility, community acceptance, economy and cost effectiveness.

a. Yolobus

This plan recommends that YOLOBUS establish minimum standards for the experimental Southport commute service. It also recommends that a trial Saturday service to Woodland be seriously considered. More direct service to Yuba College and County Fair Mall in Woodland and Riverbend Senior Manor is recommended. YOLOBUS, along with the city jurisdictions, should study the possibilities of establishing park-and-ride sites.

b. Minitran

This plan recommends that the existing system be maintained.

c. Handi-Van

This plan recommends that the existing system be maintained and that a voucher system be considered as a means of handling times when the system reaches capacity.

H.5 SUMMARY OF TRANSIT NEEDS

The following is a summary of the specific transit needs and service demands identified in this section. These needs have been derived from an analysis of public testimony; operating statistics; demographic information; interviews with public officials, transit operators, and local staff; and the latest performance audit.

The needs outlined below should be viewed in the context of the Transportation Development Act Unmet Needs Process. Here, unmet needs are identified, while later in this report, service alternatives responding to those perceived needs are described and recommendations made. The recommendations will balance these needs with such factors as equity, timing, feasibility, community acceptance, economy and cost effectiveness. Thus, the unmet needs constitute only one needs of the process which leads to a determination of which can reasonably be met.

There is a need for the following for Woodland:

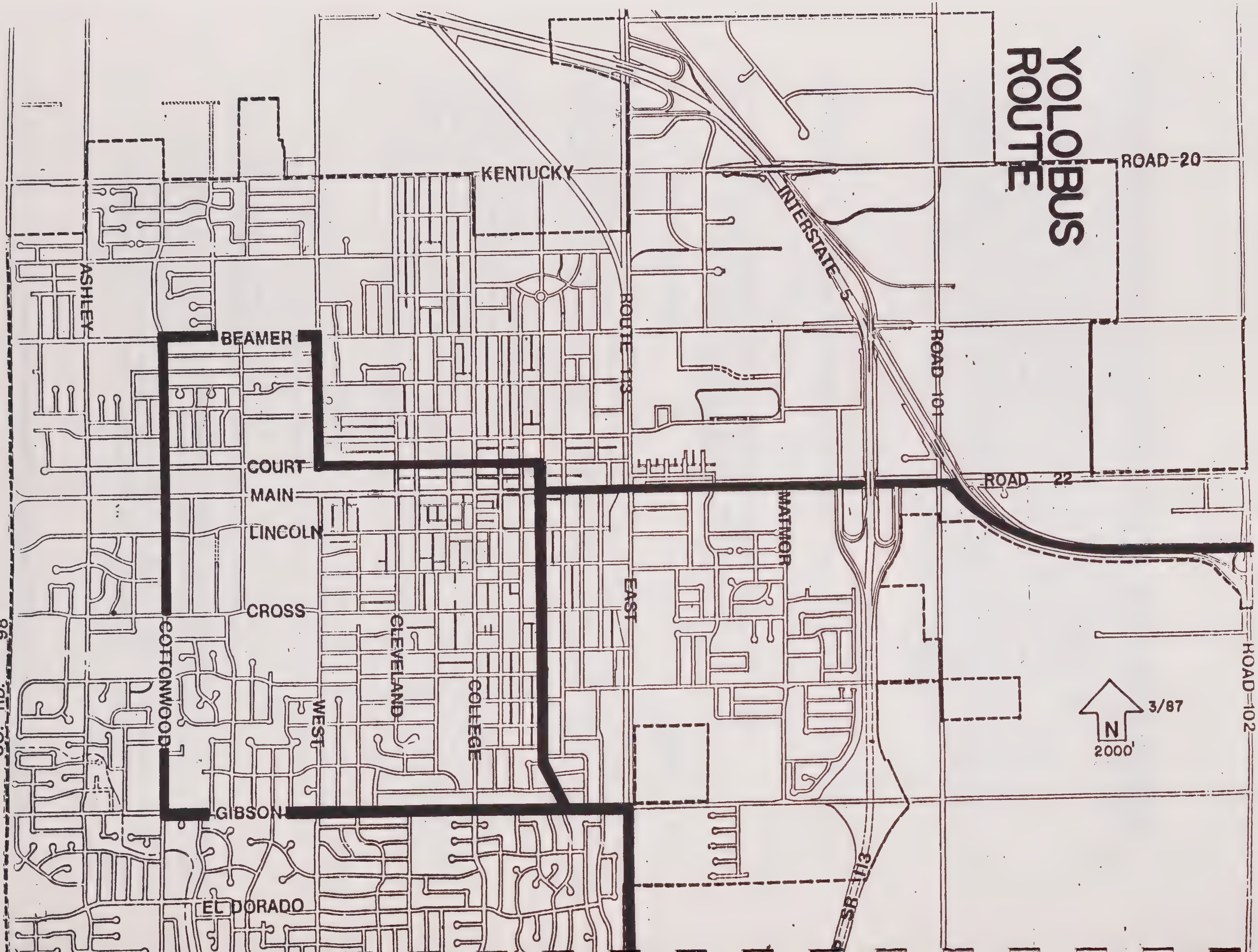
1. Saturday service to Woodland

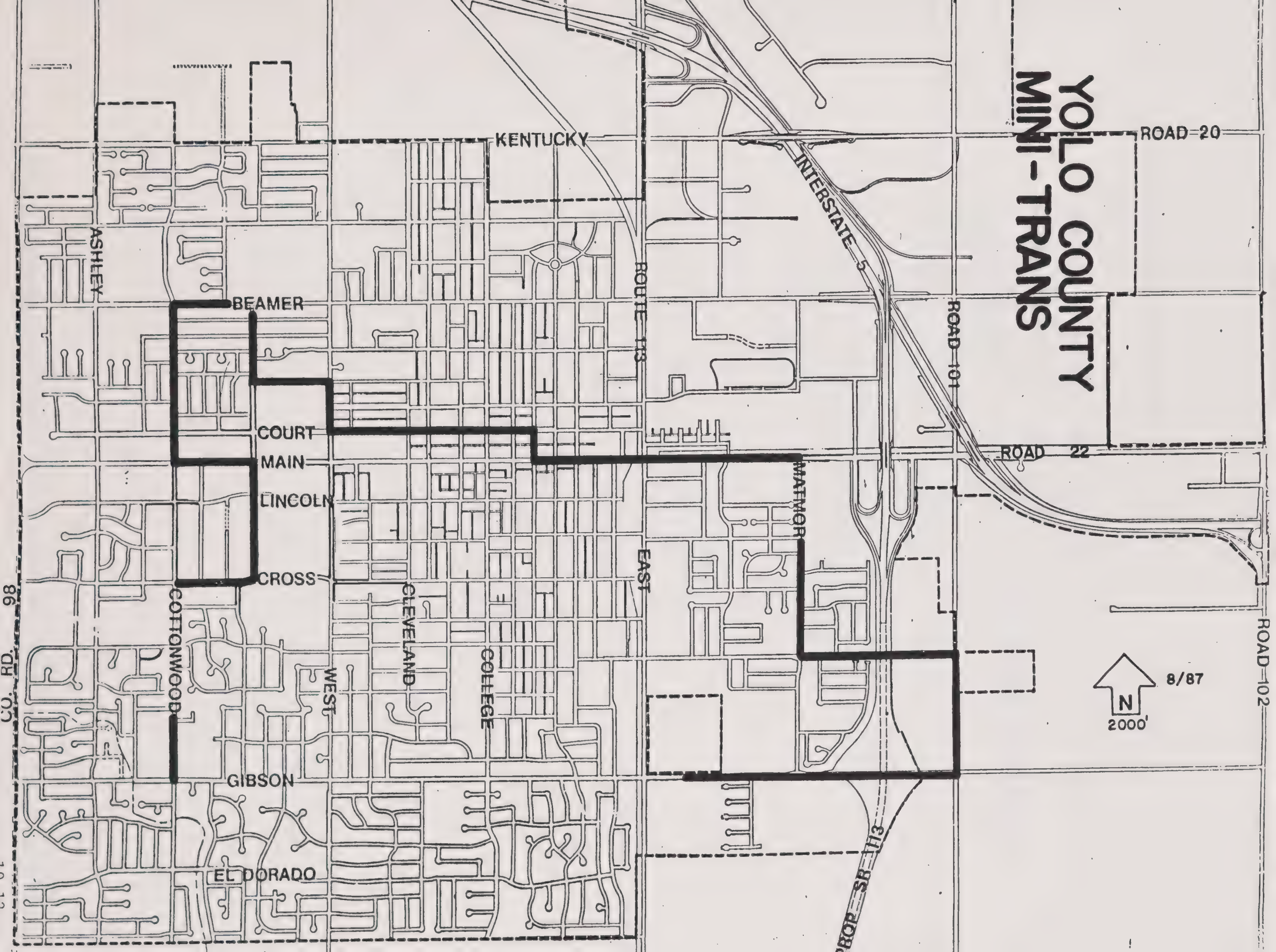
2. More direct service to Yuba College and County Fair Mall in Woodland, and the Riverbend Senior Manor in West Sacramento

3. Integrating the GAIN program into the transit systems

4. Developing a park-and-ride program for Yolo County

5. Developing a plan for service expansion for Handi-Van


YOLOBUS
ROUTE
ROAD 20
KENTUCKY
INTERSTATE 5
ASHLEY
BEAMER
ROUTE 113
ROAD 101
COURT
MAIN
LINCOLN
ROAD 22
MATMOR
CROSS
COTTONWOOD
CLEVELAND
EAST
COLLEGE
WEST
CO. RD. 98
ROAD 102
3/87
N
2000'
GIBSON
EL DORADO
SR 113


YOLO COUNTY
MINI-TRANS
ROAD 20
KENTUCKY
INTERSTATE 5
ROUTE 113
ROAD 101
ASHLEY
BEAMER
COURT
MAIN
LINCOLN
CROSS
ROAD 22
MATMOR
EAST
CLEVELAND
COLLEGE
WEST
COTTONWOOD
CO. RD. 98
ROAD 102
8/87
N
2000'
GIBSON
EL DORADO
PROP SR 113

19.0 TRANSPORTATION/CIRCULATION

SOURCES

1. Woodland General Plan, 1987, Tansportation/Circulation Element

2. Action Plan 1970 - Summary of MEA

3. Short Range Transit Plan - Sacramento Area Council of Governments - November 1987

TRANSPORTATION APPENDIX

City of Woodland

CIRCULATION/TRANSPORTATION MASTER PLAN

Existing Conditions Report

DKS Associates

May 1988

DKS Associates

CITY OF WOODLAND
CIRCULATION AND TRANSPORTATION
MASTER PLAN STUDY

Working Paper 1
Existing Conditions

Prepared for

CITY OF WOODLAND

DKS Associates
May, 1988

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SECTION I
INTRODUCTION

The purpose of the City of Woodland Circulation and Transportation Master Plan Study is to evaluate traffic circulation needs with the City's sphere of influence and subsequently recommend a plan to develop a future transportation system capable of meeting these needs. This study is undertaken at the direction of the City of Woodland. The work program that will be performed by DKS Associates is designed to accomplish the following study objectives.

1. Evaluate the existing transportation system.

2. Develop a travel demand forecasting model.

3. Test area-wide land use and circulation alternatives.

4. Develop capital costs estimates for each alternative at a level of detail consistent with its level of definition.

5. Recommend street alignments and a priority program for citywide circulation system.

6. Identify the range of funding sources available to the City for development of the circulation system.

This Working Paper is the first in a series of reports to be prepared for this study and represents the completion of the first work element. Working Paper 1 documents the existing transportation conditions in the study area. The report summarizes existing traffic and roadway capacity conditions, transit, truck, rail and air services as well as bicycle and pedestrian activity. Additional Working Papers will be prepared to document the travel forecasting model, evaluation of alternative circulation systems, and an implementation strategy. The various Working Papers will be brought together into one unified document, the Circulation/Transportation Master Plan.

SECTION II
INVENTORY OF TRANSPORTATION CONDITIONS

The evaluation of the operating characteristics of the existing circulation system in the City of Woodland is the initial task in developing a long-term transportation plan. In order to understand the existing travel patterns and conditions, all key aspects of transportation in Woodland were inventoried. The following sections discuss briefly roadway functions, traffic speeds and volumes, levels of service, travel characteristics and accidents as well as transit, truck, rail and air services, bicycle routes and pedestrian activity.

A. TRAFFIC/CIRCULATION

1. Functional Classification

Roadways have two functions, which are incompatible from a design standpoint, to provide mobility and to provide land access. High or continued speeds are desirable for mobility, while low speeds are more desirable for land access. A functional classification provides a functional specialization in meeting the access and mobility requirements of the roadways: local facilities emphasize the land access function, arterials emphasize a high level of mobility for through movement, and collectors offer a more balanced service for both functions.

Woodland's major street pattern was developed on a grid system oriented in north/south and east/west directions. The Circulation Element of the General Plan for the City of Woodland of December, 1987, outlines a functional classification of roadways within the city limits. Major arterial streets are located at one mile intervals with the exception of Court Street. Collector streets are generally located at the half-mile intervals between the major arterial streets although additional collector streets have been designated at approximately quarter mile intervals in most areas of the city. The following list includes the arterial and collector streets that are identified in the plan.

<u>Arterials</u>

County Road 98
West Street
East Street (S.R. 113)
County Road 101
County Road 102
Kentucky Avenue
Court Street
Main Street
Gibson Road

<u>Collectors</u>

Ashley Avenue
Cottonwood Street
California Street (Beamer to Gibson)
College Street
Third Street (Beamer to Gibson)
Matmor Road (South of Main)
Beamer Street
Lincoln Avenue
Cross Street
East Gum Avenue
El Dorado Drive

An illustration of the functional network is shown in Figure 1. Any street not designated an arterial or collector is considered a local street.

The typical street rights-of-way and street sections in the City of Woodland area indicated in Table 1 below.

Table 1
Street Right-of Way and Section

Street Classification	Right-of-Way	Street Section*
Local	44' to 50'	34' to 40'
Collector	50' to 80'	40' to 64
Arterial	80' to 125'	64' to 115'

* The street section is measured from the face of curb to face of curb.

DKS Associates

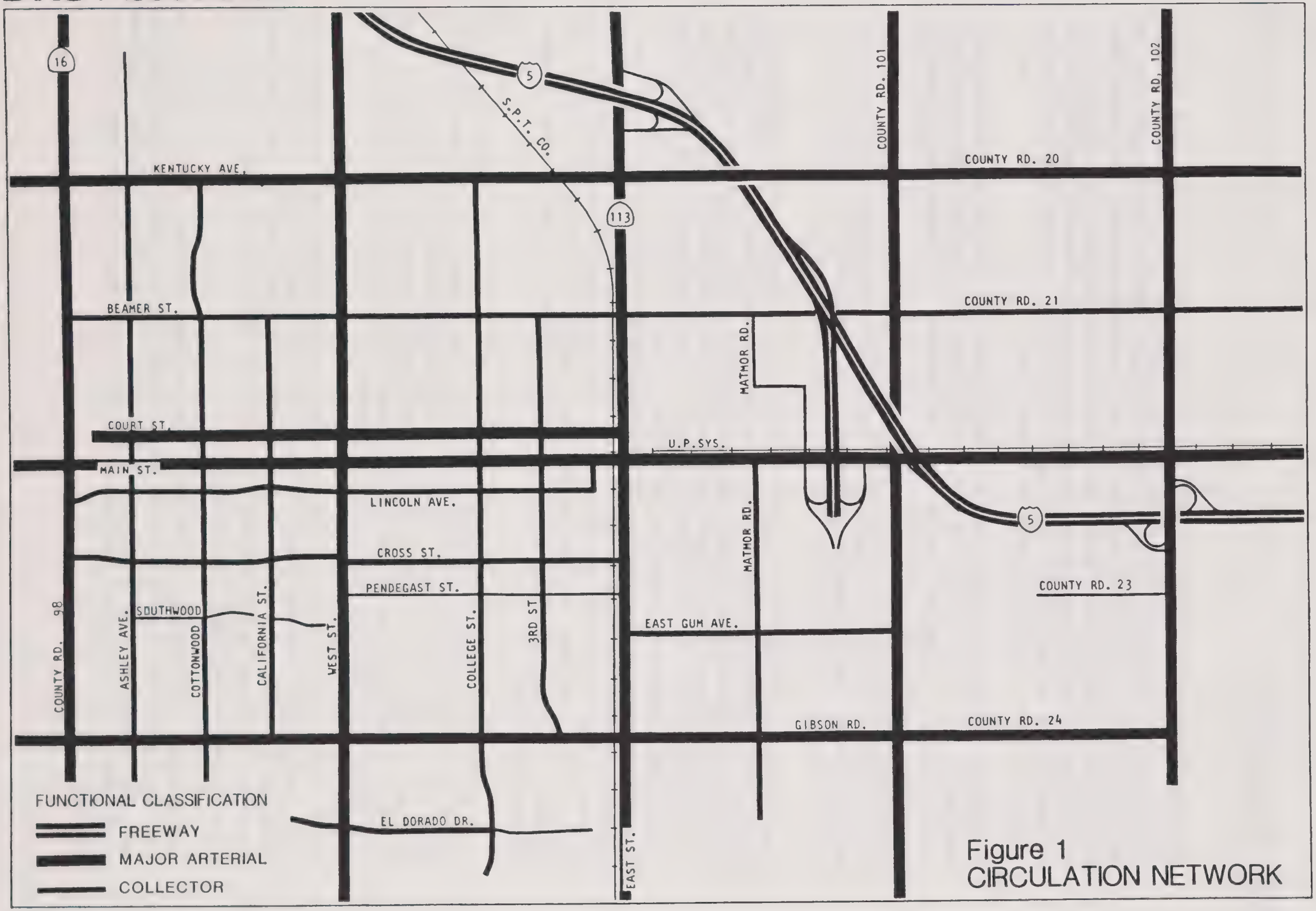

Figure 1
CIRCULATION NETWORK

SOURCE: CITY OF WOODLAND

2. Traffic Speed and Volume

The speed limit zones on primary collectors and arterials within the City of Woodland are summarized in Figure 2. For reference purposes, spot speed data from a 1986 study, conducted by the City, is also presented. The speed survey data indicates that high travel speeds occur where low traffic, high design standards or rural traffic conditions exist, such as in El Dorado Drive and sections of East Main Street, Beamer Street and Gibson Road.

A number of recent average daily traffic counts for the street systems were obtained from the City of Woodland. DKS Associates conducted afternoon peak period turning movement counts at 16 location to determine intersection conditions. Additional recent P.M. peak-hour counts were provided by the City Public Works Department. Figure 3 presents the 1986 average daily traffic volumes for the City of Woodland. Figure 4 shows the November 1986 and February 1988 P.M. peak hour traffic volumes. The afternoon peak traffic activity generally occurs between 4:30 and peak 5:30 P.M.

Main Street and East Street (S.R. 113) have the highest daily volumes in Woodland (17,500 and 16,000 vehicles per day, respectively). Main Street is the major East-West arterial. It has four lanes with a continuous left-turn center lane from County Road 98 to Ashley Avenue. It narrows from Ashley Avenue to Cottonwood Street to one eastbound lane and two westbound lanes. It widens again from Cottonwood Street to West Street to four lanes with a continuous left-turn center lane and no parking. Main Street has four lanes from West Street to the east of East Street with parking allowed east of Elm Street. The street widens to four lanes with a continuous left-turn lane east of Johnson Street. As daily traffic volumes on East Main Street decrease significantly east of the freeway, it is clear that Main Street is the major route from the City to Interstate 5 and vice-versa.

East Street (S.R. 113) is the major North-South arterial. It connects the areas south of Woodland with Interstate 5 and other areas north of the freeway. East Street is a four lane roadway with left turn channelization, no median and no parking. Daily volumes range from about 8,000 vehicles at the northern and southern city limits, to 16,000 vehicles near Main Street. Daily volumes drop significantly, to 5,300 vehicles, north of Interstate 5.

West Street and Cottonwood Street, which are major north-south streets, also carry large traffic volumes near the Main Street commercial area. They both are two-lane roadways with left turn channelization, on-street parking, and bike lanes. West Street serves 10,500 vehicles per day near Main Street, while Cottonwood Street serves about 13,000 vehicles per day.

Court Street carries about 11,000 daily vehicles near the civic center area. This two lane, east-west arterial provides access to the city and county office buildings, and the commercial area in downtown Woodland. Court Street, between East and West Street, is a two-lane roadway with left turn channelization and on-street parking.

Gibson Road between County Road 98 and Cottonwood Street is a two-lane arterial which serves 5,700 daily vehicles. It becomes a four-lane arterial, with no left-turn channelization between Cottonwood Street and East Street, carrying about 12,500 daily vehicles. From East Street to Matmor Road, Gibson Road becomes a four-lane arterial with median and left-turn pockets, serving 6,700 daily vehicles. East of Matmor Road, it narrows to a two-lane roadway. Bicycles lanes and on-street parking spaces are provided on Gibson Road from County Road 98 to East Street.

Kentucky Avenue is an east-west two-lane arterial which serves about 9,000 daily vehicles east of West Street and 6,000 daily vehicles west of West Street. It provides access from S.R. 113 to S.R. 16.

Beamer Street is an east-west two-lane collector. It carries about 7,000 daily vehicles east of West Street. Volumes dissipate rapidly west of West Street from 7,500 to 1,800 daily vehicles. Bicycle lanes exist on Beamer Street west of College Street. On-street parking is provided.

College Street is a two-lane north-south collector with on-street parking. It serves about 6,000 daily vehicles between Gibson Road and Court Street. Daily volumes drop significantly north of Court Street and south of Gibson Road. No left turns are allowed from College Street into Main Street from 7 A.M. to 6 P.M., Sundays and holidays excepted.

DKS Associates

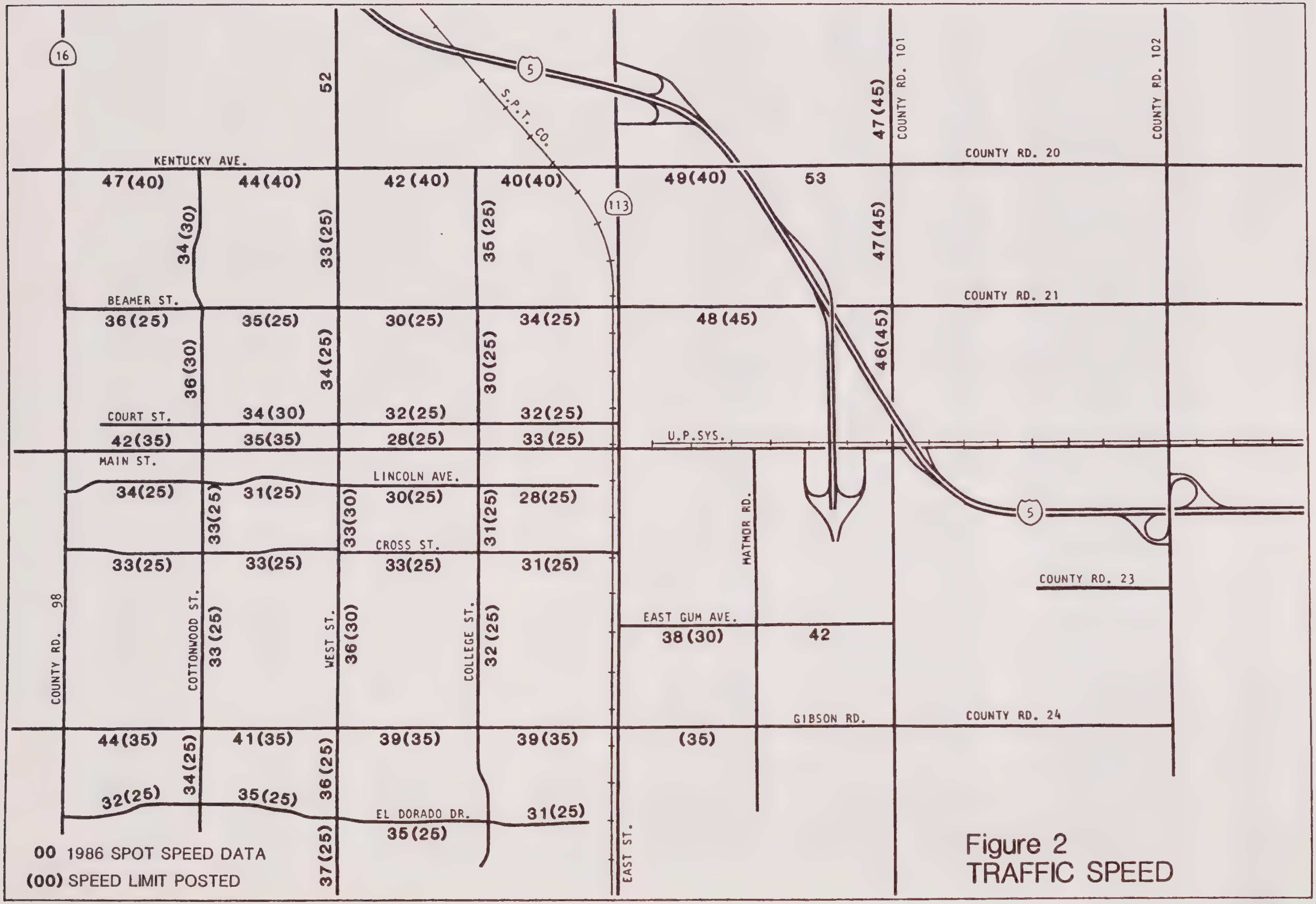

Figure 2
TRAFFIC SPEED

DKS Associates

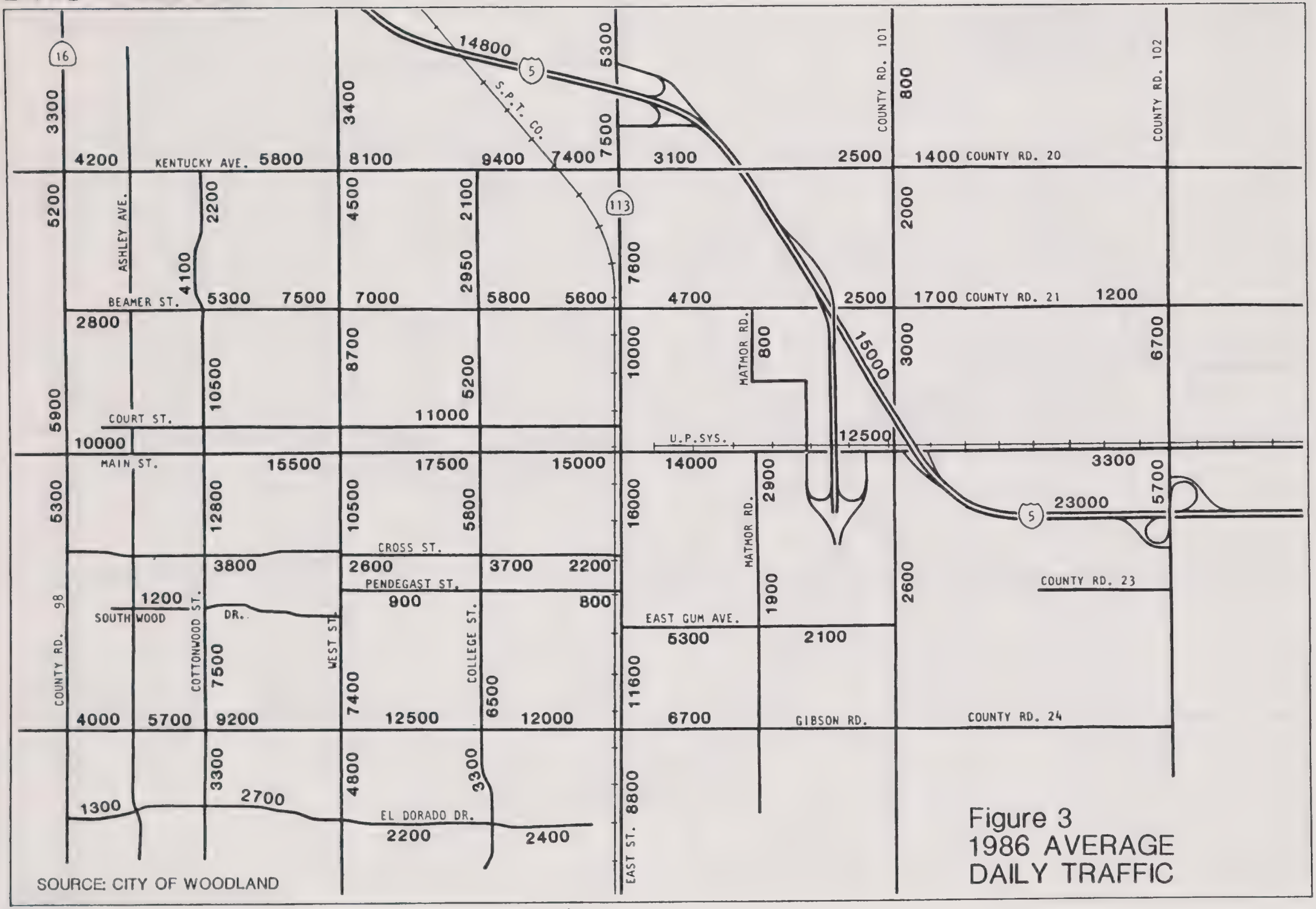

Figure 3
1986 AVERAGE
DAILY TRAFFIC

SOURCE: CITY OF WOODLAND

DKS Associates

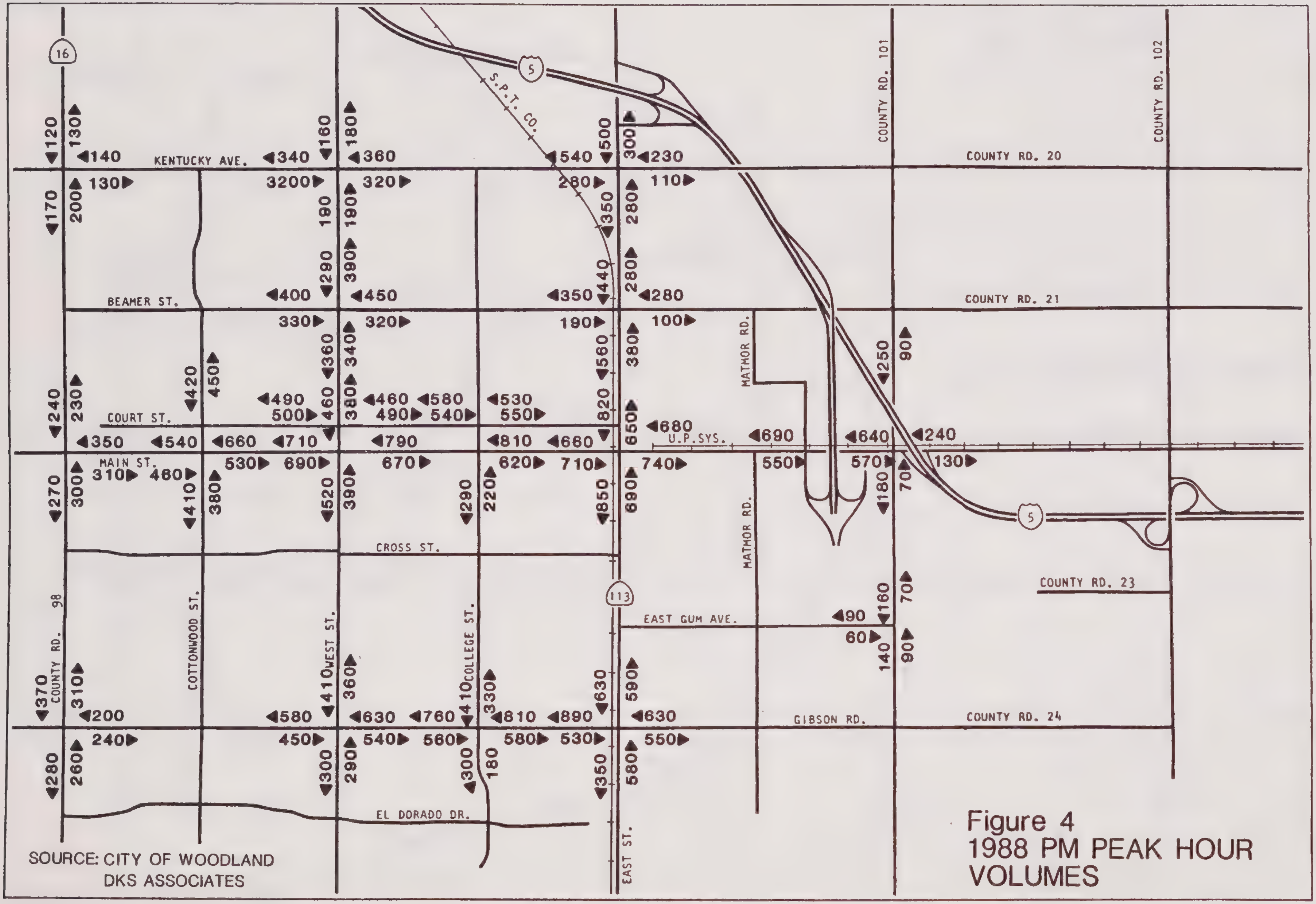

Figure 4
1988 PM PEAK HOUR VOLUMES

3. Traffic Levels of Service

Figure 5 displays the existing traffic controls at the intersections along collector and arterial streets within the City limits. Most of the intersections along the main arterials are either signalized or have a two-way stop sign control for the minor street. Exceptions are Gibson Road and Main Street at County Road 98 and West Street at Kentucky Avenue, which have four-way stop controls.

The evaluation of traffic volumes on the roadway network provides an understanding of the general nature of travel conditions in the City of Woodland. Yet traffic volumes do not indicate the quality of service provided by the street facilities nor the ability of the street network to carry additional traffic. To accomplish this, the concept of "level of service" has been developed.

Level of service is a qualitative measure of the effect of a number of factors which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operation costs. Levels of service are designated "A" through "F" from the best to worst, which cover the entire range of traffic operations that might occur. Level of service "E" describes conditions approaching and at maximum capacity. Levels of service "A", "B" and "C" are considered very acceptable, while levels "E" and "F" are unacceptable. In rural areas, and for design of new roadways, level of service "C" is more common standard.

Intersections control the traffic flow and capacity of Wooodland's collector/arterial system. Table 2 presents the level of service categories for signalized intersections considered in this analysis and provides a definition of each category with the corresponding volume-to-capacity ratios.

City staff and DKS Associates identified 23 key intersections for existing P.M. peak hour capacity analysis within Woodland, both signalized and unsignalized. These intersections are listed in Table 3. Critical movement analysis was utilized to develop level of service rating for each intersection.[1] Figure 6 presents the results of the analysis. Level of Service calculations for the fifteen signalized intersections and three two-way stop-sign controlled intersections are shown in Appendix A.

All of the signalized intersections currently operate at service level "A," "B," or "C" during the P.M. peak hour which indicates good traffic operation. It should be emphasized that this rating is the average of conditions over the peak hour and some localized congestion can occur for short periods within the peak hour or on specific intersection approaches.

Some of the City's highest volume intersections, such as Main Street or Gibson Road at College Street and East Street have a significant higher volume entering the intersection during the fifteen-minute period of the peak hour than they do

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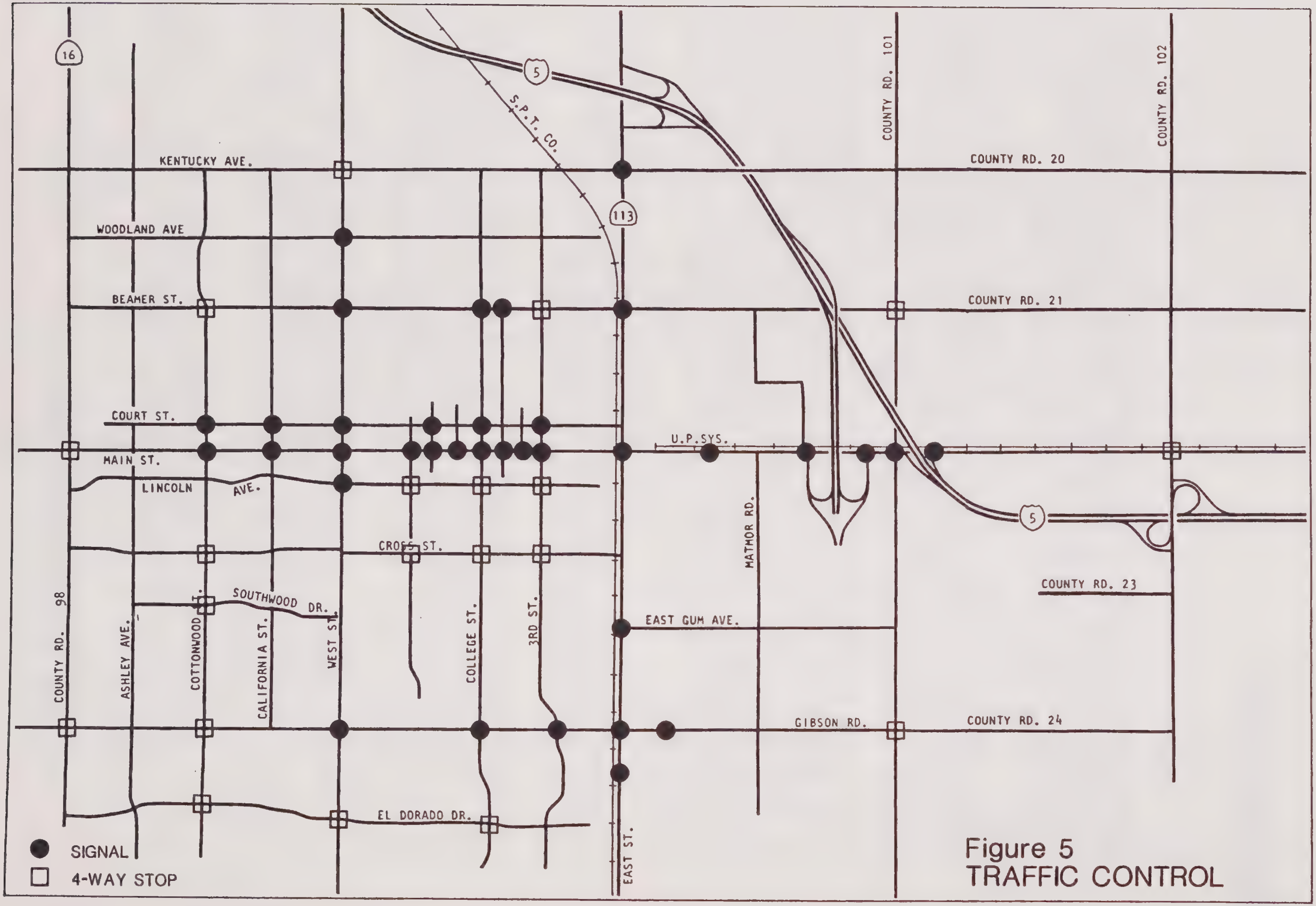
1 "Interim Materials on Highway Capacity," Transportation Research Board, Circular 212, Washington D.C., January, 1980.

DKS Associates



SOURCE: CITY OF WOODLAND

Table 2
Level of Service Interpretation

Level of Service	Definition	Average Vehicle Delay (Sec.)	Volume to Capacity Ratio
A	FREE FLOW. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Insignificant delays.	0.00 - 5.00	0.00 - 0.59
B	STABLE OPERATION. An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles. Minimal delays.	5.10 - 15.00	0.60 - 0.69
C	STABLE OPERATION. Major approach phase may become fully utilized. Most drivers feel somewhat restricted. Acceptable delays.	15.10 - 25.00	0.70 - 0.79
D	APPROACHING UNSTABLE. Drivers may have to wait through more than one red signal indication. Queues develop but dissipate rapidly, without excessive delays.	25.1 - 40.0	0.80 - 0.89
E	UNSTABLE OPERATION. Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersections. Significant delays.	40.10 - 60.00	0.90 - 0.99
F	FORCED FLOW. Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections. Excessive delays.	60 or more	Not Applicable

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Sources:

"Highway Capacity Manual," Transportation Research Board, Special Report 209, Washington, D.C., 1985.

"Interim Materials on Highway Capacity", Transportation Research Board, Circular No. 212, Washington, D.C., January, 1980.

DKS Associates.

Table 3
Analyzed Intersections

Signalized	Unsignalized
Kentucky Avenue at East Street	
Beamer Street at West Street	2-Way Stop
Beamer Street at East Street	Kentucky Avenue at County Road 98
Court Street at West Street	Kentucky Avenue at County Road 101
Court Street at College Street	Gum Avenue at County Road 101
Main Street at Cottonwood Street	
Main Street at West Street	4-Way Stop
Main Street at College Street	Kentucky Avenue at West Street
Main Street at East Street	Beamer Street at County Road 101
Main Street at I-5 NB Off-Ramp	Main Street at County Road 98
Main Street at County Road 101	Gibson Road at Road 98
Main Street at S.R. 113 NB Off Ramp	Gibson Road at County Road 101
Gibson Road at West Street	
Gibson Road at College Street	
Gibson Road at East Street	

DKS Associates

Figure 6
INTERSECTION
LEVEL OF SERVICE
PM Peak Hour

SOURCE: DKS ASSOCIATES

during the other three. The higher fifteen-minute volume can be as much as thirty percent above the average fifteen minute period during the peak one-hour. This is a case of Main Street at East Street. However, the highest fifteen minute volume usually ranges from ten to twenty percent more than average. Higher levels of congestion then exist for shorter periods of time than is reflected in the level of service calculation, which rates the average conditions over the one-hour period.

Intersections with a two-way stop-sign control usually have a lower level of service reflecting significant delay for cross-street traffic due to a limited number of gaps in the main street, or in the case of a four-way stop-sign control due to an unevenly split demand among approaches.

It is important to note that the Southern Pacific railroad tracks run immediately west of East Street and several intersections have grade crossings with little or no storage. Railroad traffic can definitely affect levels of service at those intersections causing congestion augment above the existing levels. No major traffic flow disruption was caused by the railroad when DKS Associates conducted the afternoon peak-period turning movements in February 10 and March 1, 1987.

4. Parking

The City of Woodland's Zoning Ordinance presently requires off-street parking facilities for any new development or for locations where major alterations are proposed for existing developments. The number of required spaces depends on the size and type of use of the development.

Figure 7 presents Parking District Number 1, where developments are exempt from parking requirements. Parking facilities for this area are provided by City parking lots, also shown in the same figure. The District Bonds will be paid off in 1989, and the City is considering the formation of a new district for additional off-street parking lots in the downtown area. All new developments would then be required to contribute a pro rata share for the new facilities in lieu of providing spaces.

5. Accidents

Table 4 below presents the twelve intersections in Woodland with the ten or more total accidents for 1987, according to the City's data. The total number of accidents includes those involving both injuries and property damages only.

Table 4
Accident Analysis for 1987

	Intersection Name		Traffic Device	Total Accidents
	E-W Street	N-S Street		
1.	Main Street	California Street	Signal	16
2.	Oak Street	East Street	2-Way Stop	14
3.	Gibson Road	College Street	Signal	13
4.	Cross Street	East Street	2-Way Stop	12
5.	Main Street	Third Street	Signal	12
6.	Main Street	College Street	Signal	12
7.	Main Street	Walnut Street	Signal	11
8.	Beamer Street	East Street	Signal	10
9.	Gibson Road	West Street	Signal	10
10.	Main Street	West Street	Signal	10
11.	Main Street	East Street	Signal	10
12.	Main Street	Ashley Street	2-Way Stop	10

DKS Associates

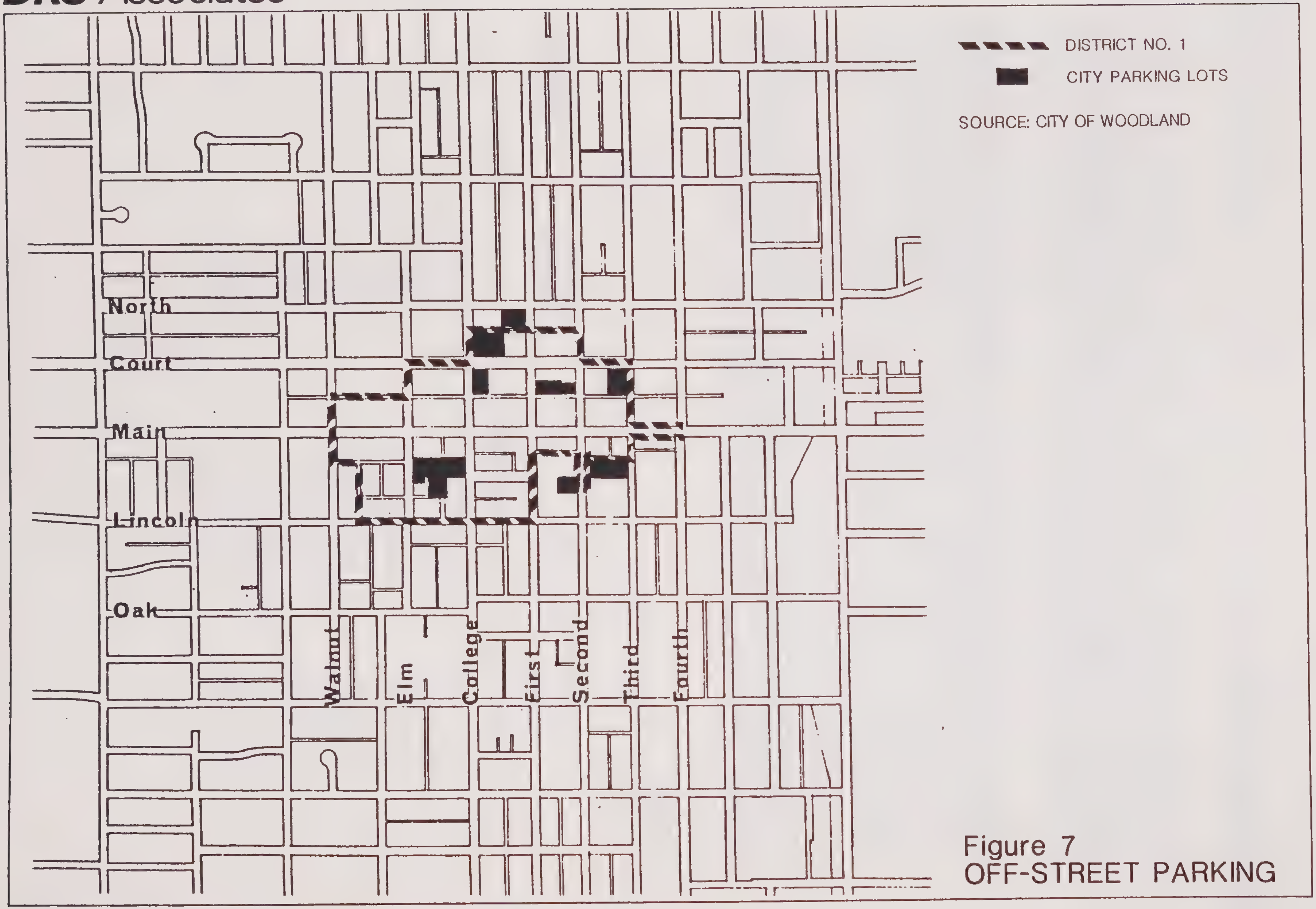

Figure 7
OFF-STREET PARKING

DKS Associates

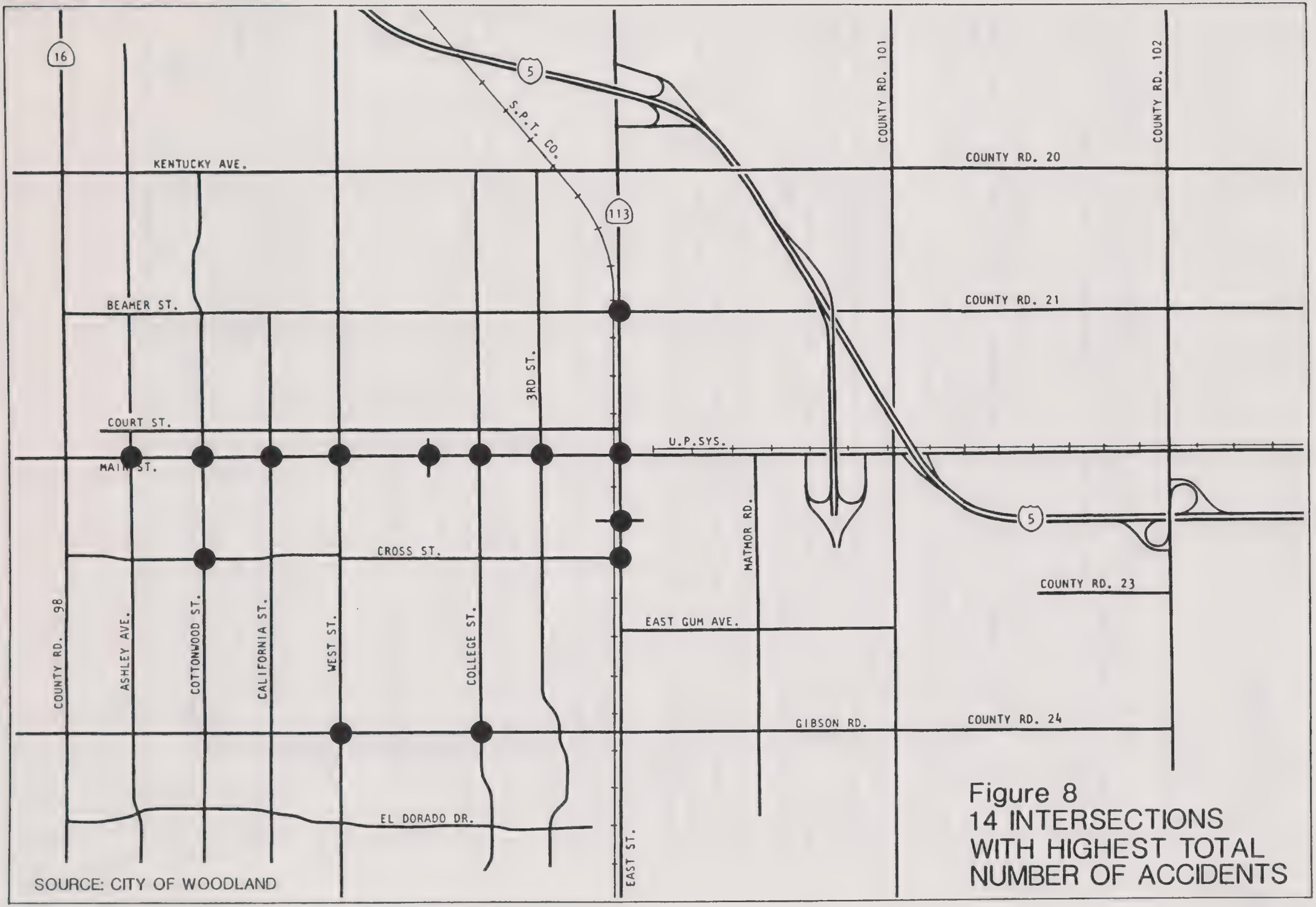

Figure 8
14 INTERSECTIONS
WITH HIGHEST TOTAL
NUMBER OF ACCIDENTS

B. TRANSIT

Transit service is currently provided to the Woodland area by the Yolo County Minitran, Yolo Bus Commuter Service and Greyhound. Other transit systems in Woodland include taxi cab services, Woodland Community Care Car and Woodland Handi-Van.

The Yolo County Minitran, started in 1974, currently provides a limited service from the outlying areas of the City to downtown. The bus travels a fixed loop route through the City under varying schedules depending on the day of the week. Fares are $0.25 for local rides and $1.00 for one-way trips outside Woodland. Figure 9 shows the Minitran route within Woodland.

The Yolo Bus Commuter Service provides fixed route service with seven daily bus schedules to and from Sacramento, Davis, and West Sacramento, Monday through Friday. There are three bus schedules during the weekend. Cost ranges from one-way $1.10 plus $.25 for a Sac Metro transfer during off-peak periods to $1.50 during peak hours. Figure 9 presents the Yolo Bus route within Woodland.

The Greyhound Bus Line service consists of an average of four daily trips in and out between Woodland and Sacramento and two daily trips to and from San Francisco. Greyhound also provides a package transport service. The terminal is located at 420 East Street, and it is closed day Saturday and all day Sunday.

The Woodland Community Care Car is a dial-a-ride service designated for senior citizens and handicapped persons in the Woodland area. A call must be placed one day in advance. The system works on a voluntary basis, no fare is charged but donations are accepted.

Woodland Handi-Van is a transit system funded by the City of Woodland to provide local door-to-door wheelchair accessible service to Woodland's disabled community within the city limits. Handi-Van operates on request Monday through Friday. The fare is $1.00 per person for each one-way trip.

Taxi service is provided by private companies.

C. BICYCLE

The City of Woodland adopted a bicycle plan on July 20, 1982. Figure 10 shows the existing bike routes within the City limits. Yolo-County developed a bicycle plan in 1974 and designated county roads 22, 24, 99 and 102 as bicycle routes. The City's bike routes on Gibson Road and West Street tie into those County's routes as shown in Figure 10.

The City Public Works Department is currently preparing an amended bicycle plan.

DKS Associates

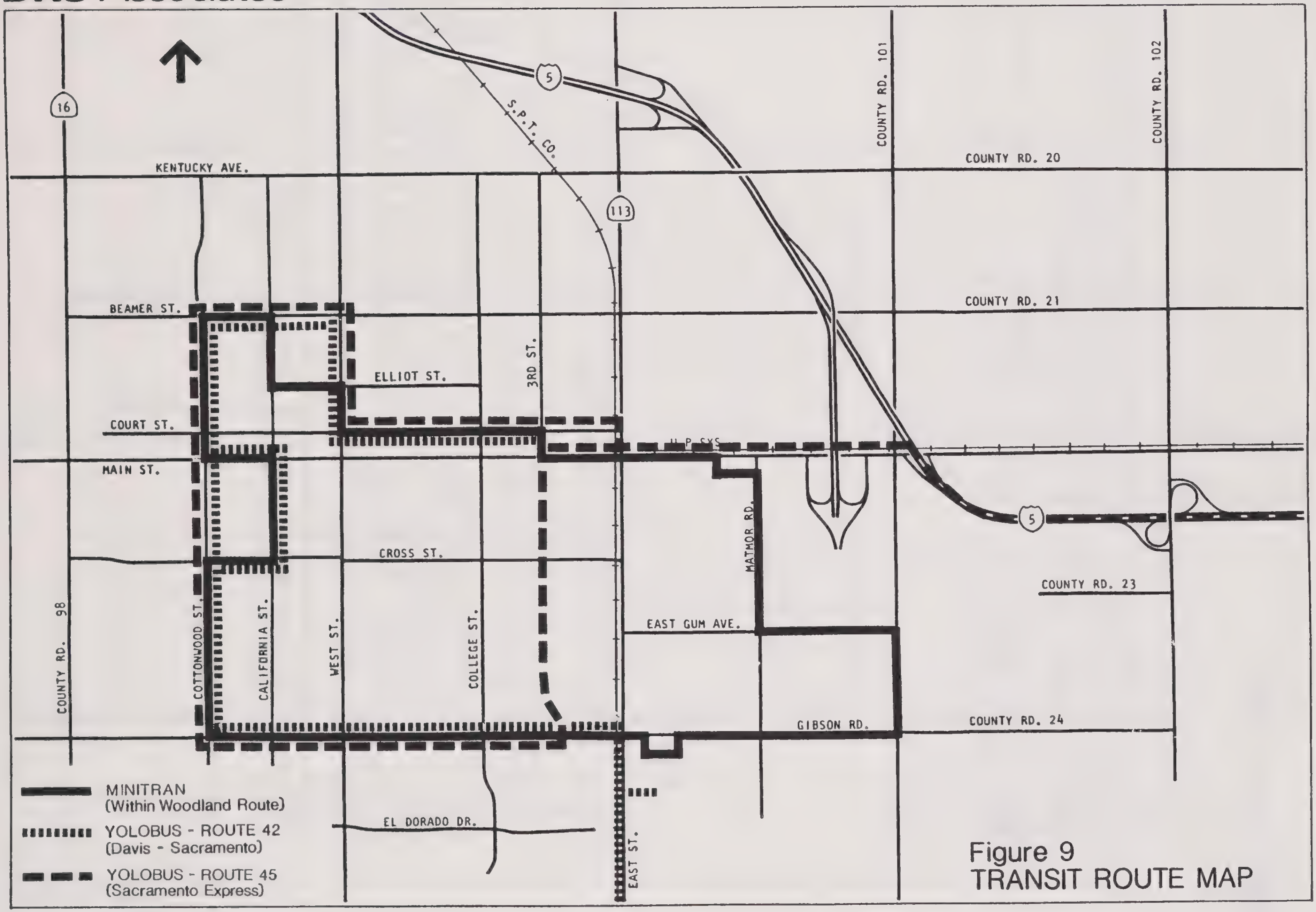

Figure 9
TRANSIT ROUTE MAP

SOURCE: YOLO COUNTY MINITRAN
YOLO BUS

D. PEDESTRIANS

The City standards require sidewalks along all improved streets except in the industrial areas. Handicap ramps are required at the intersections in the new subdivisions. The City currently is undertaking the reconstruction of the sidewalks in the older part of town to incorporate handicap ramps

Table 5 below presents typical sidewalks widths according to the functional classification of the street:

Table 5
Sidewalk Width

Classification	Sidewalk Width
Local	5'
Collector	8' to 10'
Major Arterial	10'

E. TRUCKS

Trucking is the major mode of transportation of goods to and from Woodland. The City is the primary agricultural trucking center in Yolo County and generates high volumes of truck traffic during the harvest seasons.

There are fourteen interstate carriers and about 100 independent operators which connect the City with all market areas of the nation.

The major truck routes in the City of Woodland are County Road 98, East Street (S.R. 113), County Road 101, County Road 102, and Kentucky Avenue. City ordinances prohibit through truck traffic over 5 tons south of Kentucky Avenue except on East Street (S.R. 113) and County Road 98. The City Public Works Department is currently implementing a new ordinance for through "super-truck" traffic. Truck routes are shown in Figure 11.

The major terminal facilities in Woodland are the trucking company base facilities, inspection stations, agricultural processing plants and distribution ware houses, located in the industrial zone, in the northeast quadrant of the City.

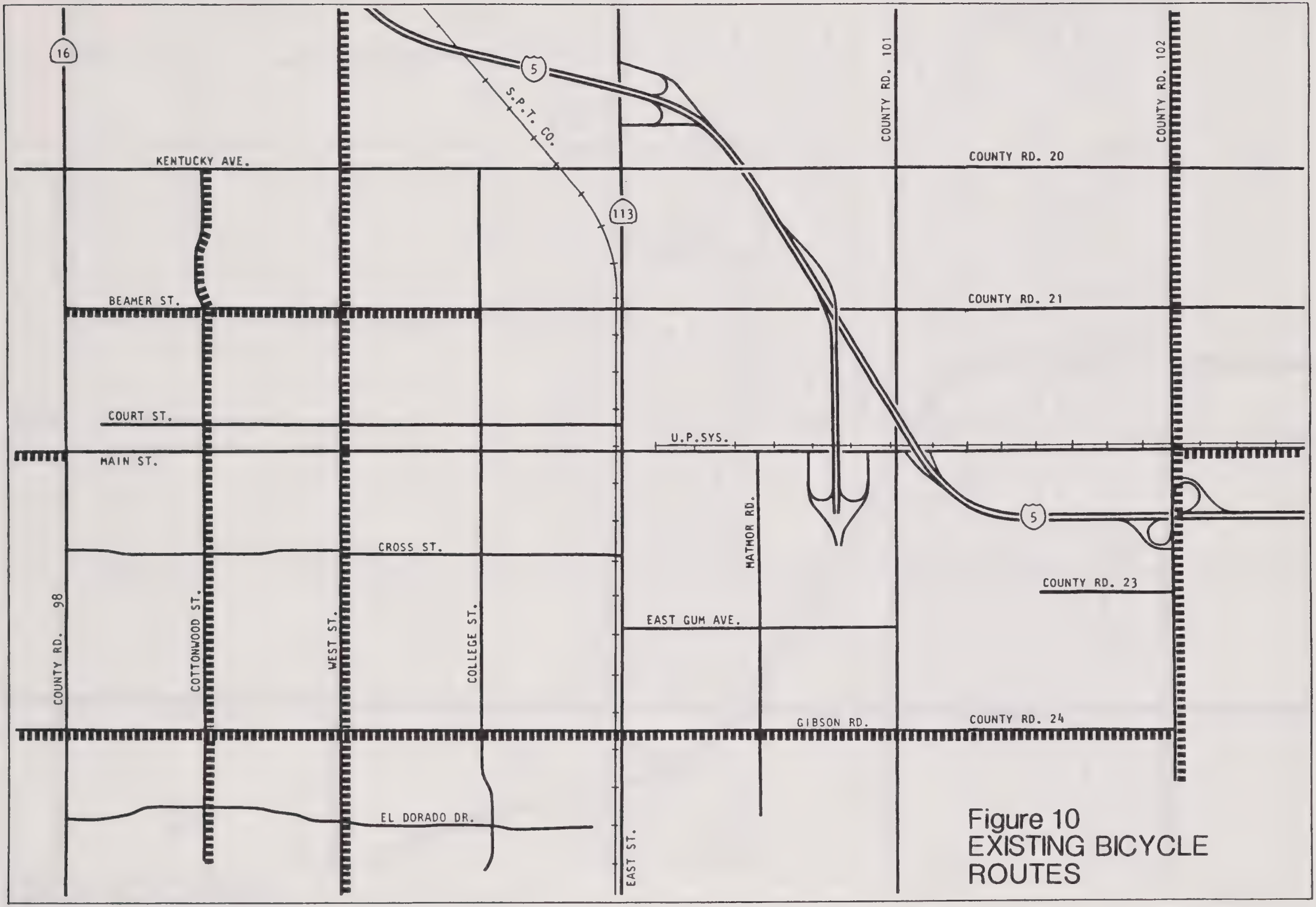

Figure 10
EXISTING BICYCLE
ROUTES

DKS Associates

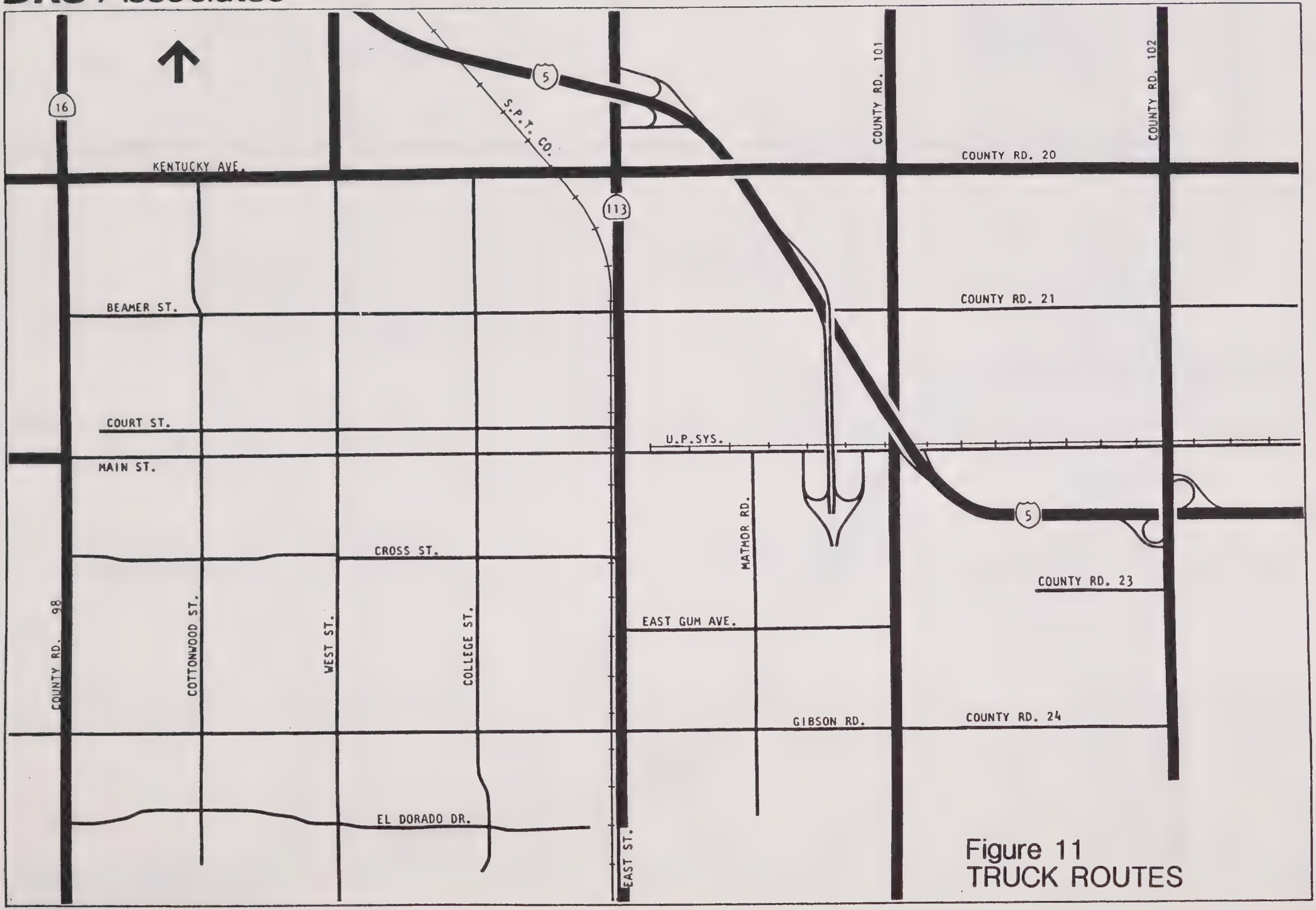

Figure 11
TRUCK ROUTES

F. RAIL

Woodland is served by the Southern Pacific Railroad and the Union Pacific Railroad. Southern Pacific Railroad operates approximately ten freight and two passenger trains through Woodland each day. The Union Pacific Railroad serves the Sacramento Port and generally operates one freight train per day. Amtrack offers additional passenger service from its station at Davis, 9 miles to the south.

The Southern Pacific mainline parallels East Street on its west side through Woodland as shown in Figure 12. The adjacent land uses along the tracks are mostly light industrial, with residential areas adjacent to the tracks south of Gibson Road. North of Beamer Street the railroad spurs extend into the industrial are, in the northeast quadrant of the City.

The Union Pacific's tracks run adjacent to and north of East Main Street with spurs extending north, as shown in Figure 12. Adjacent land uses are industrial and agricultural.

At grade mainline railroad crossings exist at ten locations west of East Street, and three location north of East Main Street. Although train traffic only blocks these crossings for a limited amount of time each day, train blockages on major streets such as Kentucky Avenue, Beamer Street, Main Street and Gibson Road during peak traffic hours can cause substantial congestion and delays.

Southern Pacific Railroad has a small switching yard facility at the southwest corner of Main and East Streets, used by the train operating in the industrial are. The Union Pacific tracks located north of East Main Street are the end of the line and are used as a temporary car storage and loading area.

DKS Associates

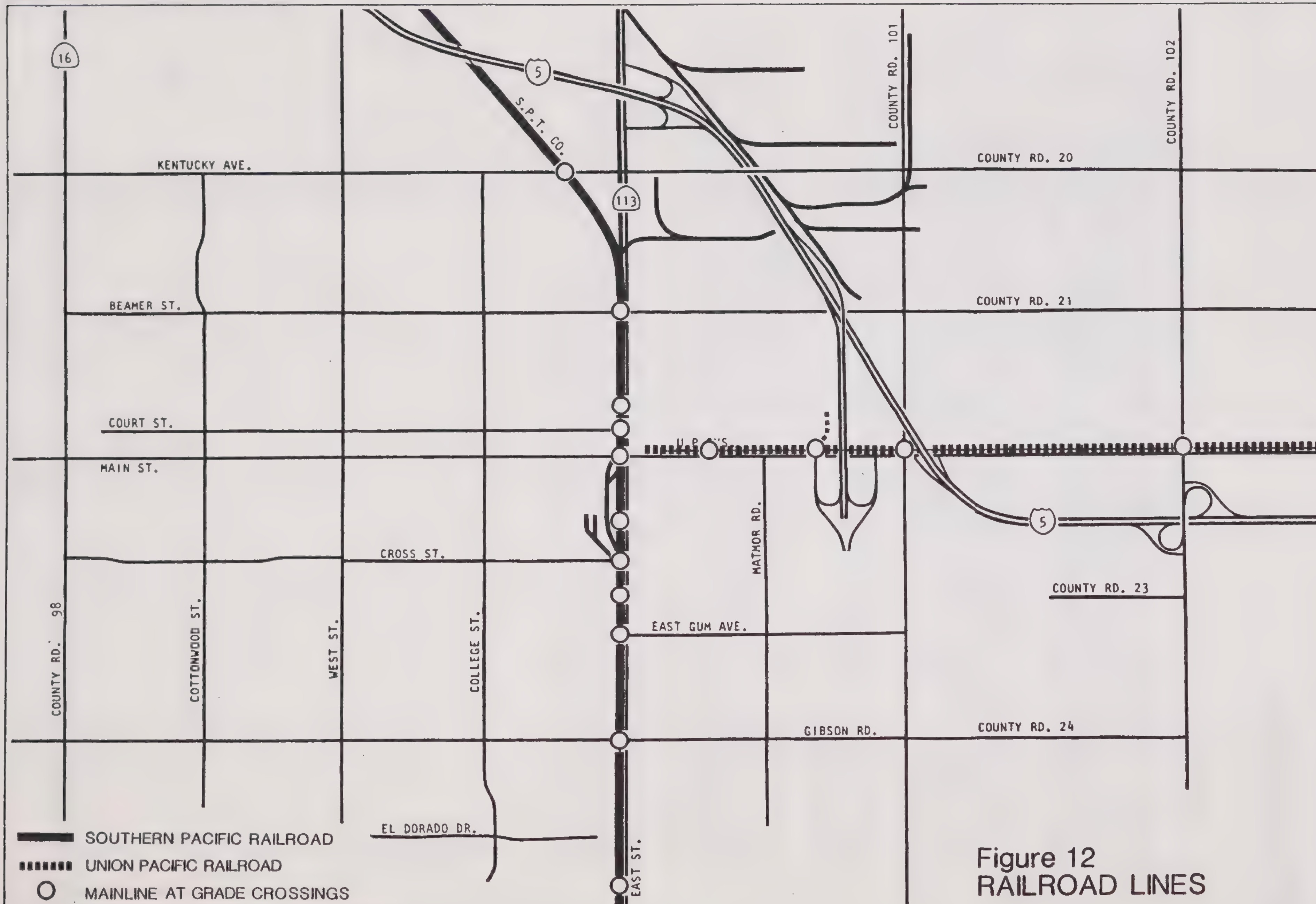

Figure 12
RAILROAD LINES

G. AIR

Air transportation includes the use of general and commercial aviation, and military aircraft.

The general aviation airport in the Woodland area are Watts-Woodland Airport allocated five miles west of Woodland, on State Route 16, and Yolo County Airport in the vicinity of County Roads 94 and 29. The Watts-Woodland airport has a 3,200 foot paved and lighted air-strip, with all facilities for light and medium aircrafts. A number of small landing strips serving as agricultural crop duster bases are located around the Woodland area.

Sacramento Metropolitan Airport, located 11 miles east of Woodland, via Interstate 5, is served by six major carriers, five commuter lines and twenty air freight services. It is the major jet terminal facility in the Sacramento area. The airport served approximately 2.8 million passengers in 1987 and handled more than 33 million pounds of air freight and mail. A new 8,600 foot parallel runway was opened in October 1987, the first step in a major expansion program which will culminate with the opening of a new terminal complex in 1991. Parking spaces are provided for about 6,000 vehicles, with free shuttle bus service to the terminals. Maximum daily rates are $5.00 for short and $3.00 for long term parking.

The nearest military airports are Mather and McClellan fields in Sacramento, Travis Air Force Base in Fairfield, and Beale Air Force Base in Marysville.

APPENDIX A
LEVEL OF SERVICE
P.M. PEAK HOUR

SIGNALIZED INTERSECTIONS

TWO-WAY STOP-SIGN CONTROLLED INTERSECTIONS

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 3 Kentucky Ave. & East Street

Lane Configuration and Turn Volumes

```
|------------------|------------------|------------------|------------------|
|                  |       |||        |                  |                  |
|                  |       |||        |     T  146       |  ^               |
|              ^   |       ||| \      |                  |                  |
|  L  128     /    |      /||   >     | L  110    R   21 |   \      R   26  |
|            --    |    < vv          |                  |  <----           |
|  T   73   ---->  |                  |          ^^ >    |     --   T  160  |
|             \    |                  |       <  ||/     |    /             |
|  R   82      v   | R  267    L   13 |        \|||      |   v      L   47  |
|                  |       T  219     |         |||      |                  |
|------------------|------------------|------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	EXL	1	110	110
	TR	2	84	
SB	EXL	1	13	
	T	1	219	219
	R	1	267	
EB	EXL	1	128	128
	TR	1	155	
WB	EXL	1	47	
	TR	1	186	186
	Total Critical Volume			643

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume	=	643
No of Critical Phases	=	4
Level of Service	=	A
Volume/Capacity	=	0.47

N/S Signal Phasing

```
|--------|--------|--------|
||       |        |  /|    |
| \      |        | < v    |
|  >     | < ^ >  |     ^ >|
|    <   |  \|/   |     |/ |
|     \| |   |    |     |  |
|--------|-- or --|--------|
         |  /|\   |
         | < v >  |
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|       -|   ^    |      ^ |
|      / |  /     |       \|
|     v  | -->    | -->  <--|
|    ^   |  \     |  \     |
|   /    |   v    |   v    |
|  -     |        |        |
|--------|-- or --|--------|
         |   ^    |
         |    \   |
         |   <--  |
         |    /   |
         |   v    |
         |--------|
```

8 Phase Signal

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 4 Beamer Street & West Street

Lane Configuration and Turn Volumes

```
                        |                 T  218       ^
 L   52        ^      / | \      L   49         R  69   \        R  57
               /     < v >                              <----
 T  221    ---->                     < ^ >              /        T 309
               \                      \|/              v
 R   61        v   R  44    L  27      |                         L  81
                       T  222          |
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	L	0	49	49
	TR	1	287	
SB	L	0	27	
	TR	1	266	266
EB	L	0	52	52
	TR	1	282	
WB	L	0	81	
	TR	1	366	366
	Total Critical Volume			733

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume	= 733
No of Critical Phases	= 2
Level of Service	= A
Volume/Capacity	= 0.49

N/S Signal Phasing

```
   |
 / | \
< v >
    < ^ >
     \|/
      |
```

E/W Signal Phasing

```
         ^
   ^      \
  /      <--
-->       /
  \      v
   v
```

2 Phase Signal

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 5 Beamer Street & East Street

Lane Configuration and Turn Volumes

```
|------------------|------------------|------------------|------------------|
|                  |       ||         |                  |                  |
|                  |       ||         |     T  220       |                  |
|             ^    |       ||         |                  |  ^               |
|  L   29    /     |      /||\        |L  124      R  32 |   \       R   26 |
|          --      |     < vv >       |                  |  <----           |
|  T   53   ---->  |                  |     < ^^ >       |     --    T  163 |
|              \   |                  |      \||/        |    /            |
|  R  106       v  |R   60      L   18|       ||         |  v        L   94 |
|                  |     T  359       |       ||         |                  |
|------------------|------------------|------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	L	0	124	124
	TR	2	250	
SB	L	0	18	
	TR	2	219	219
EB	EXL	1	29	
	TR	1	159	159
WB	EXL	1	94	94
	TR	1	189	
	Total Critical Volume			596

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

```
Critical Volume          =  596
No of Critical Phases    =    2
Level of Service         =    A
Volume/Capacity          = 0.40
```

N/S Signal Phasing

```
|--------|--------|--------|
|  |     |        |        |
| /|\    |        |        |
|< v >   |        |        |
|   < ^ >|        |        |
|    \|/ |        |        |
|     |  |        |        |
|--------|--------|--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|     ^  |        |        |
|  ^   \ |        |        |
| /   <--|        |        |
|-->   / |        |        |
| \   v  |        |        |
|  v     |        |        |
|--------|--------|--------|
```

2 Phase Signal

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 6 Court Street & West Street

Lane Configuration and Turn Volumes

```
|------------------|------------------|------------------|------------------|
|                  |       |||        |                  |                  |
|                  |       |||        |      T  263      |  ^               |
|              ^   |      / | \       |                  |   \              |
| L   35      _/   |     <  |  >      | L   91     R  65 |  <----    R  83  |
|           --     |        v         |                  |  <----           |
| T  327    ---->  |                  |            ^ >   |     --    T 334  |
|           --     |                  |         <  |/    |    /            |
| R  137      \    | R  66     L  94  |          \ |     |  v        L  47  |
|              v   |                  |           ||     |                  |
|                  |      T  298      |           ||     |                  |
|------------------|------------------|------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	EXL	1	91	
	TR	1	328	328
SB	EXL	1	94	94
	T	1	298	
	EXR	1	66	
EB	EXL	1	35	
	T	1	327	327
	EXR	1	137	
WB	EXL	1	47	47
	TR	2	209	
	Total Critical Volume			796

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume	= 796
No of Critical Phases	= 2
Level of Service	= A
Volume/Capacity	= 0.53

N/S Signal Phasing

```
|--------|--------|--------|
|  |     |        |        |
| /|\    |        |        |
|< v >   |        |        |
|   < ^ >|        |        |
|    \|/ |        |        |
|     |  |        |        |
|--------|--------|--------|
         |        |
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|      ^ |        |        |
|   ^   \|        |        |
| /   <--|        |        |
|-->   / |        |        |
| \   v  |        |        |
|  v     |        |        |
|--------|--------|--------|
         |        |
         |        |
         |--------|
```

2 Phase Signal

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 7 Court Street & College St.

Lane Configuration and Turn Volumes

```
|-------------------|------------------|------------------|-------------------|
|                   |       ||         |                  |                   |
|                   |       ||         |     T  120       |                   |
|               ^   |       | \        |                  |  ^                |
|  L   43     _/    |      /|  >       |L   70      R   56|   \      R   43   |
|             --    |     < v          |                  | <----             |
|  T  431     ---->  |                  |        ^ >       |    --    T  449   |
|                \   |                  |     < |/         |    /             |
|  R   61         v |R   60       L   59|      \|          |  v       L   37   |
|                   |      T  130      |       ||         |                   |
|-------------------|------------------|------------------|-------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	EXL	1	70	70
	TR	1	176	
SB	EXL	1	59	
	TR	1	190	190
EB	EXL	1	43	43
	TR	1	492	
WB	EXL	1	37	
	TR	1	492	492
	Total Critical Volume			795

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

```
Critical Volume            =  795
No of Critical Phases =    2
Level of Service           =    A
Volume/Capacity            = 0.53
```

N/S Signal Phasing

```
|--------|--------|--------|
|  |     |        |        |
| /|\    |        |        |
|< v >   |        |        |
|   < ^ >|        |        |
|    \|/ |        |        |
|     |  |        |        |
|--------|--------|--------|
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|      ^ |        |        |
|  ^    \|        |        |
| /    <--        |        |
|-->   / |        |        |
| \   v  |        |        |
|  v     |        |        |
|--------|--------|--------|
         |        |
         |--------|
```

2 Phase Signal

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 9 Main Street & Cottonwood St

Lane Configuration and Turn Volumes

```
|------------------|------------------|------------------|------------------|
|                  |       ||         |                  |                  |
|                  |       ||         |     T  246       |  ^               |
|             ^    |       | \        |                  |   \              |
| L   93      /    |      /|  >       | L   34     R  104| <----     R  111 |
|           --     |     < v          |                  | <----            |
| T  333   ---->   |                  |         ^ >      |    --     T  435 |
|          ---->   |                  |       <  |/      |    /             |
| R   32       \   | R   70     L   88 |        \ |       |   v       L  118 |
|               v  |                  |         ||       |                  |
|                  |      T  259      |         ||       |                  |
|------------------|------------------|------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	EXL	1	34	
	TR	1	350	350
SB	EXL	1	88	88
	TR	1	329	
EB	EXL	1	93	93
	TR	2	183	
WB	EXL	1	118	
	TR	2	273	273
	Total Critical Volume			804

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume	=	804
No of Critical Phases	=	4
Level of Service	=	A
Volume/Capacity	=	0.58

N/S Signal Phasing

```
|--------|--------|--------|
||       |        |   |    |
| \      |        |  /|    |
|  >     |        | < v    |
|     <  | < ^ >  |    ^ > |
|      \ |  \|/   |    |/  |
|       ||   |    |    |   |
|--------|-- or --|--------|
         |   |    |
         |  /|\   |
         | < v >  |
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|       -|   ^    |   ^    |
|      / |  /     |    \   |
|     v  | -->    | -->  <--|
|   ^    |  \     |  \     |
|  /     |   v    |   v    |
| -      |        |        |
|--------|-- or --|--------|
         |   ^    |
         |    \   |
         |   <--  |
         |    /   |
         |   v    |
         |--------|
```

8 Phase Signal

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 10 Main Street & West Street

Lane Configuration and Turn Volumes

```
|------------------|------------------|------------------|------------------|
|                  |        ||        |                  |                  |
|                  |        ||        |      T  256      |   ^              |
|               ^  |        | \       |                  |    \             |
| L   96      /    |       /|  >      |L   90      R   47| <----     R  103 |
|           --     |      < v         |                  | <----            |
| T  519    ---->  |                  |         ^ >      |    --     T  562 |
|           ---->  |                  |       < |/       |    /            |
| R   72        \  |R   56     L  107 |        \||       |   v       L  126 |
|                v |     T  323       |         ||       |                  |
|------------------|------------------|------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	EXL	1	90	90
	TR	1	303	
SB	EXL	1	107	
	TR	1	379	379
EB	EXL	1	96	96
	TR	2	296	
WB	EXL	1	126	
	TR	2	333	333
	Total Critical Volume			898

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume	= 898
No of Critical Phases	= 4
Level of Service	= B
Volume/Capacity	= 0.65

N/S Signal Phasing

```
|--------|--------|--------|
||       |        |   |    |
| \      |        |  /|    |
|  >     |        |< v     |
|     <  |  < ^ > |    ^ > |
|      \||   \|/  |    |/  |
|--------|-- or --|--------|
         |   |
         |  /|\
         | < v >  |
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|       -|        |     ^  |
|      / |    ^   |      \ |
|     v  |   /    |    <-- |
|  ^     |  -->   | -->    |
| /      |   \    |  \     |
|-       |    v   |   v    |
|--------|-- or --|--------|
         |     ^
         |      \
         |    <--
         |      /
         |     v  |
         |--------|
```

8 Phase Signal

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

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CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 11 Main Street & College St.

Lane Configuration and Turn Volumes

```
|------------------|-----------------|-----------------|-----------------|
|                  |        |        |                 |                 |
|                  |        |        |     T  181      |                 |
|              ^   |        |        |                 |  ^              |
| L  35        /   |      / | \      |L    5     R  32 |  \      R  45   |
|          ---->   |     < v >       |                 | <----           |
| T 576    ---->   |                 |      < ^ >      | <----   T 742   |
|              \   |                 |       \|/       |   /             |
| R  60        v   |R  45      L   7 |        |        |  v      L  24   |
|                  |     T  201      |        |        |                 |
|------------------|-----------------|-----------------|-----------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	L	0	5	5
	TR	1	213	
SB	L	0	7	
	TR	1	246	246
EB	L	0	35	35
	TR	2	388	
WB	L	0	24	
	TR	2	442	442
	Total Critical Volume			728

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume = 728
No of Critical Phases = 2
Level of Service = A
Volume/Capacity = 0.49

N/S Signal Phasing

```
|--------|--------|--------|
|   |    |        |        |
|  /|\   |        |        |
| < v >  |        |        |
|    < ^ >        |        |
|     \|/|        |        |
|      | |        |        |
|--------|--------|--------|
         |        |
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|      ^ |        |        |
|  ^    \|        |        |
| /   <--|        |        |
|-->    /|        |        |
| \    v |        |        |
|  v     |        |        |
|--------|--------|--------|
         |        |
         |        |
         |--------|
```

2 Phase Signal

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

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CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 12 Main Street & East Street

Lane Configuration and Turn Volumes

```
|-------------------|------------------|-------------------|------------------|
|                   |      |||         |                   |                  |
|               ^   |      |||         |     T  403        |  ^               |
|  L   78      /    |     /|| \        |                   |   \              |
|            --     |    < vv  >       | L  181     R  104 |  <----     R 172 |
|  T  439    ---->  |                  |        ^^ >       |  <----           |
|            ---->  |                  |      <  ||/       |     --     T 397 |
|  R  190      \    | R   77     L 201 |       \ ||        |    /             |
|               v   |                  |        |||        |   v        L 109 |
|                   |     T  546       |        |||        |                  |
|-------------------|------------------|-------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	EXL	1	181	181
	TR	2	254	
SB	EXL	1	201	
	TR	2	312	312
EB	EXL	1	78	
	TR	2	315	315
WB	EXL	1	109	109
	TR	2	285	
Total Critical Volume				917

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume = 917
No of Critical Phases = 4
Level of Service = B
Volume/Capacity = 0.67

N/S Signal Phasing

```
|--------|--------|--------|
||       |        |   |    |
| \      |        |  /|    |
|  >     |        | < v    |
|    <   | < ^ >  |    ^ > |
|     \| |  \|/   |    |/  |
|--------|-- or --|--------|
         |   |    |
         |  /|\   |
         | < v >  |
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|       -|        |   ^    |
|      / |   ^    |    \   |
|     v  |  /     |   <--  |
|  ^     | -->    | -->    |
| /      |  \     |  \     |
|-       |   v    |   v    |
|--------|-- or --|--------|
         |   ^    |
         |    \   |
         |   <--  |
         |    /   |
         |   v    |
         |--------|
```

8 Phase Signal

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

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CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 13 Gibson Road & West Street

Lane Configuration and Turn Volumes

```
|-------------------|------------------|------------------|------------------|
|                   |       ||         |                  |                  |
|                   |       ||         |      T  211      |                  |
|               ^   |       | \        |                  | ^                |
|  L   32      /    |      /|  >       |L   49      R   27|  \      R  114   |
|          ---->    |     < v          |                  |<----            |
|  T  381  ---->    |                  |         ^  >     |<----    T  460   |
|              \    |                  |       <  |/      |  /               |
|  R   41       v   |R   72      L  135|        \ |       | v       L   57   |
|                   |      T  199      |         ||       |                  |
|-------------------|------------------|------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	EXL	1	49	
	TR	1	238	238
SB	EXL	1	135	135
	TR	1	271	
EB	L	0	32	32
	TR	2	243	
WB	L	0	57	
	TR	2	344	344
	Total Critical Volume			749

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

```
Critical Volume           =  749
No of Critical Phases =    3
Level of Service          =    A
Volume/Capacity           = 0.53
```

```
        N/S Signal Phasing                       E/W Signal Phasing
   |--------|--------|--------|            |--------|--------|--------|
   ||       |        |   |    |            |     ^  |        |        |
   | \      |        |  /|    |            |  ^   \ |        |        |
   |  >     |        |< v     |            | /   <--|        |        |
   |     <  | < ^ >  |    ^ > |            |-->   / |        |        |
   |      \ |  \|/   |    |/  |            | \   v  |        |        |
   |       ||        |    |   |            |  v     |        |        |
   |--------|-- or --|--------|            |--------|--------|--------|
            |   |\   |                              |        |
            | / | \  |                              |        |
            |< v  >  |                              |        |
            |        |                              |        |
            |--------|                              |--------|
```

5 Phase Signal

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

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CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88

Existing Conditions - Signalized Intersections

Intersection: 14 Gibson Road & College St.

Lane Configuration and Turn Volumes

```
|------------------|------------------|------------------|------------------|
|                  |       ||         |                  |                  |
|                  |       ||         |     T   98       |                  |
|              ^   |       | \        |                  |  ^               |
|  L   91     /    |      /|  >       |L   41      R   44|   \     R  137   |
|         ---->    |     < v          |                  | <----            |
|  T  416 ---->    |                  |         ^        | <----   T  608   |
|           \      |                  |      <  |  >     |    /             |
|  R   49    v     |R  111     L  121 |       \ | /      |  v      L   68   |
|                  |                  |        |||       |                  |
|                  |     T  178       |        |||       |                  |
|------------------|------------------|------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	EXL	1	41	41
	T	1	98	
	EXR	1	44	
SB	EXL	1	121	
	TR	1	289	289
EB	L	0	91	91
	TR	2	415	
WB	L	0	68	
	TR	2	441	441
	Total Critical Volume			862

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume	=	862
No of Critical Phases	=	3
Level of Service	=	B
Volume/Capacity	=	0.60

N/S Signal Phasing

```
|--------|--------|--------|
||       |        |   |    |
| \      |        |  /|    |
|  >     |        | < v    |
|     <  | < ^ >  |     ^ >|
|      \ |  \|/   |     |/ |
|       ||   |    |     |  |
|--------|-- or --|--------|
         |   |    |
         |  /|\   |
         | < v >  |
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|     ^  |        |        |
|  ^   \ |        |        |
| /   <--|        |        |
|-->   / |        |        |
| \   v  |        |        |
|  v     |        |        |
|--------|--------|--------|
         |        |
         |--------|
```

5 Phase Signal

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 15 Gibson Road & East Street

Lane Configuration and Turn Volumes

```
|------------------|------------------|------------------|------------------|
|                  |       |||        |                  |                  |
|                  |       |||        |      T  355      |     ^            |
|              ^   |       || \       |                  |      \           |
|  L  119     /    |      /||  >      |L  156      R  66 |       --    R 114|
|           --     |     < vv         |                  |  <----           |
|  T  344   ---->  |                  |         ^^ >     |  <----      T 485|
|           ---->  |                  |       <  ||/     |       --         |
|  R   69       \  |R  245      L  137|        \ |||     |      /      L  27|
|                v |                  |          |||     |     v            |
|                  |       T  250     |          |||     |                  |
|------------------|------------------|------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	EXL	1	156	156
	TR	2	211	
SB	EXL	1	137	
	TR	2	248	248
EB	EXL	1	119	119
	TR	2	207	
WB	EXL	1	27	
	T	2	243	243
	EXR	1	114	
	Total Critical Volume			766

Maximum Total Critical Volumes			
Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

```
Critical Volume          =  766
No of Critical Phases    =    4
Level of Service         =    A
Volume/Capacity          = 0.56
```

```
        N/S Signal Phasing                         E/W Signal Phasing
|--------|--------|--------|               |--------|--------|--------|
||       |        |   |    |               |       -|    ^   |    ^   |
| \      |        |  /|    |               |      / |   /    |     \  |
|  >     |        | < v    |               |     v  |  -->   |   <--  |
|     <  |  < ^ > |    ^ > |               |   ^    |   \    |  -->   |
|      \||   \|/  |    |/  |               |  /     |    v   |   \    |
|       ||    |   |    |   |               | -      |        |    v   |
|--------|-- or --|--------|               |--------|-- or --|--------|
         |   |    |                                 |   ^    |
         |  /|\   |                                 |    \   |
         | < v >  |       8 Phase Signal            |   <--  |
         |        |                                 |    /   |
         |        |                                 |   v    |
         |--------|                                 |--------|
```

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

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CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88

Existing Conditions - Signalized Intersections

Intersection: 17 Main Street & I-5 NB Off-Rm

Lane Configuration and Turn Volumes

```
                                            L  334      R    3
               ---->                                                <----
  T  130       ---->                                <   >           <----     T  237
                                                   < \ /
                                                    \ ||
                                                      ||
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	LR	2	169	169
EB	T	2	65	
WB	T	2	119	119
	Total Critical Volume			288

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume = 288
No of Critical Phases = 3
Level of Service = A
Volume/Capacity = 0.20

N/S Signal Phasing

```
  < ^ >
   \|/
    |
```

E/W Signal Phasing

```
   <--       |       <--
    /        |        /
   v         |  -->  v
             |  \
             |   v
```

3 Phase Signal

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88
Existing Conditions - Signalized Intersections
Intersection: 18 Main Street & Co. Road 101

Lane Configuration and Turn Volumes

```
|------------------|-----------------|-----------------|------------------|
|                  |        |        |                 |                  |
|                  |        |        |     T   24      |  ^               |
|                ^ |        |        |                 |   \              |
| L   36        /  |      /|\        | L   21     R  26| <----    R   28  |
|             --   |     < v >       |                 | <----            |
| T  484      ---->|                 |       < ^ >     |     --   T  522  |
|             ---->|                 |        \|/      |    /             |
| R   46        \  |R   92     L   71|         |       |   v      L   40  |
|                v |                 |         |       |                  |
|                  |     T   93      |         |       |                  |
|------------------|-----------------|-----------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	L	0	21	21
	TR	1	50	
SB	L	0	71	
	TR	1	185	185
EB	EXL	1	36	36
	TR	2	265	
WB	EXL	1	40	
	TR	2	275	275
	Total Critical Volume			517

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume	= 517
No of Critical Phases	= 3
Level of Service	= A
Volume/Capacity	= 0.36

N/S Signal Phasing

```
|--------|--------|--------|
|  |     |        |        |
| /|\    |        |        |
|< v >   |        |        |
|   < ^ >|        |        |
|    \|/ |        |        |
|     |  |        |        |
|--------|--------|--------|
         |        |
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|       -|   ^    |    ^   |
|      / |  /     |     \  |
|     v  | -->    |    <-- |
|   ^    |  \     | -->    |
|  /     |   v    |  \     |
| -      |        |   v    |
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         |   ^    |
         |    \   |
         |   <--  |
         |    /   |
         |   v    |
         |--------|
```

5 Phase Signal

IMPAX 2.22 Traffic Analysis on Microcomputers PRC ENGINEERING

Program Licensed To: DKS Associates

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element 04/07/88

Existing Conditions - Signalized Intersections

Intersection: 19 Main Street & 113 NB Off-Rm

Lane Configuration and Turn Volumes

```
|------------------|------------------|------------------|------------------|
|                  |        |         |     T    1       |                  |
| L   22     ^     |       / \        |L   12     R   15 |^         R   19  |
|           /      |      <   >       |      < ^ >       | \                |
| T  529  --       |                  |       \|/        |<----     T  609  |
|         ---->    |                  |        |         |<----             |
|         ---->    |R   72      L   31|        |         |                  |
|------------------|------------------|------------------|------------------|
```

Appr	Lane Group	No of Lanes	Per Lane Volume	Critical Volume
NB	L	0	12	12
	TR	1	16	
SB	L	0	31	
	R	1	72	72
EB	EXL	1	22	22
	T	2	265	
WB	TR	2	314	314
	Total Critical Volume			420

Maximum Total Critical Volumes

Level of Service	Two Phase	Three Phase	Four Phase
A	900	855	825
B	1050	1000	965
C	1200	1140	1100
D	1350	1275	1225
E	1500	1425	1375
F	NA	NA	NA

Critical Volume = 420
No of Critical Phases = 3
Level of Service = A
Volume/Capacity = 0.29

N/S Signal Phasing

```
|--------|--------|--------|
|  |     |        |        |
| /|\    |        |        |
|< v >   |        |        |
|  < ^ > |        |        |
|   \|/  |        |        |
|    |   |        |        |
|--------|--------|--------|
         |        |
         |--------|
```

E/W Signal Phasing

```
|--------|--------|--------|
|        |      ^ |        |
|   ^    |  ^    \|        |
|  /     | /   <--|        |
|-->     |-->   / |        |
| \      | \   v  |        |
|  v     |  v     |        |
|--------|--------|--------|
         |        |
         |--------|
```

3 Phase Signal

DKS Associates - Oakland

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element
Existing Conditions

Intersection: 1 Kentucky Avenue & County Road 98

Lane Configuration and Turn Volumes

```
|--------------------|------------------|------------------|--------------------|
|                    |        ||        |                  |                    |
|                    |        ||        |      T   95      |                    |
|                 ^  |        | \       |                  |                    |
|  L   11       /    |      /|  >       | L   19     R  83 | ^         R   24   |
|           ---->    |     < v          |                  |  \                 |
|  T   25    --      |                  |            ^ >   | <----     T   47   |
|              \     |                  |        <  |/     |  /                 |
|  R    9        v   | R    5     L  21 |         \ |      | v         L   70   |
|                    |                  |          ||      |                    |
|                    |      T   90      |          ||      |                    |
|--------------------|------------------|------------------|--------------------|
```

	MAJOR ROADWAY (40 MPH)		MINOR ROADWAY (2-WAY STOP)					
APPROACH	NB	SB	EB			WB		
MOVEMENT	L	L	L	T	R	L	T	R
CONTROL	UNC	UNC	STOP	STOP	STOP	STOP	STOP	STOP
VOLUME (VPH)	19	21	11	25	9	70	47	24
VOLUME (PCPH)	21	23	12	28	10	77	52	26
CONFLICTING FLOW	95	178	382	311	93	306	272	137
CRITICAL GAP (SEC)	5.5	5.5	7.0	7.0	6.0	7.0	7.0	6.0
POTENTIAL CAPACITY	1000	913	515	572	908	576	603	864
PERCENT OF CAPACITY	2	3		5	1		9	3
IMPEDENCE FACTOR	0.99	0.98		0.97	0.99		0.95	0.98
ACTUAL CAPACITY	1000	913	466	556	908	540	586	864
SHARED LANES				TL			LTR	
SHARED LANE CAPACITY				525			593	
RESERVE CAPACITY	979	890		485	898		438	
LEVEL OF SERVICE	A	A		A	A		A	

DKS Associates - Oakland

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element
Existing Conditions

Intersection: 20 Kentucky Avenue & County Road 101

Lane Configuration and Turn Volumes

```
|----------------|----------------|----------------|------------------|
|                |       |        |    T   15      |                  |
|            ^   |       |        |                |                  |
| L  15     /    |      /|\       |L   40     R   5| ^       R   15   |
|        ---->   |     < v >      |                |  \               |
| T  55     \    |                |     < ^ >      | <----   T   50   |
|            v   |                |      \|/       |  /               |
| R  30          |R   30    L   10|       |        | v       L   10   |
|                |    T   75      |       |        |                  |
|----------------|----------------|----------------|------------------|
```

	MAJOR ROADWAY (45 MPH)		MINOR ROADWAY (2-WAY STOP)					
APPROACH	NB	SB	EB			WB		
MOVEMENT	L	L	L	T	R	L	T	R
CONTROL	UNC	UNC	STOP	STOP	STOP	STOP	STOP	STOP
VOLUME (VPH)	40	10	15	55	30	10	50	15
VOLUME (PCPH)	44	11	17	61	33	11	55	17
CONFLICTING FLOW	105	20	225	160	90	258	173	18
CRITICAL GAP (SEC)	5.5	5.5	7.0	7.0	6.0	7.0	7.0	6.0
POTENTIAL CAPACITY	990	1079	640	698	910	614	686	983
PERCENT OF CAPACITY	4	1		9	4		8	2
IMPEDENCE FACTOR	0.97	0.99		0.95	0.98		0.95	0.99
ACTUAL CAPACITY	990	1079	583	675	910	551	664	983
SHARED LANES				LTR			LTR	
SHARED LANE CAPACITY				714			690	
RESERVE CAPACITY	946	1068		604			607	
LEVEL OF SERVICE	A	A		A			A	

DKS Associates - Oakland

CITY OF WOODLAND - MASTER PLAN

Circulation and Transportation Element
Existing Conditions

Intersection: 22 Gum Avenue & County Road 101

Lane Configuration and Turn Volumes

```
|-------------------|------------------|------------------|-------------------|
|                   |        |         |                  |                   |
|                   |        |         |    T   40        |                   |
|                ^  |        |         |                  |                   |
| L   30       /    |       /|         |L   45            |                   |
|           ---     |      < v         |                  |                   |
|              \    |                  |          < ^     |                   |
|               v   |                  |           \|     |                   |
| R   32            |R   54            |            |     |                   |
|                   |                  |            |     |                   |
|                   |      T  106      |            |     |                   |
|-------------------|------------------|------------------|-------------------|
```

	MAJOR ROADWAY (40 MPH)		MINOR ROADWAY (1-WAY STOP)		
APPROACH	NB	SB	EB		WB
MOVEMENT	L		L	R	
CONTROL	UNC		STOP	STOP	
VOLUME (VPH)	45		30	32	
VOLUME (PCPH)	50		33	35	
CONFLICTING FLOW	160		218	133	
CRITICAL GAP (SEC)	5.5		7.0	6.0	
POTENTIAL CAPACITY	932		646	867	
PERCENT OF CAPACITY	5			4	
IMPEDENCE FACTOR	0.97			0.98	
ACTUAL CAPACITY	932		625	867	
SHARED LANES			LR		
SHARED LANE CAPACITY			730		
RESERVE CAPACITY	883		662		
LEVEL OF SERVICE	A		A		

Public Services

20.0 PUBLIC SERVICES

The City of Woodland provides a range of urban services to its incorporated area. These include police and fire protection, public works services (sewage disposal, water, storm drainage, street construction and maintenance, street tree planting and maintenance, trash pick-up, solid waste disposal), library services, parks and recreation programs, building inspection, planning and general City administration.

Other public services available to the City and the General Plan Area are educational opportunities through the various school districts (elementary, junior and senior high school, community college and adult education), social, health and welfare services administered through the County of Yolo, public transportation (related in the Circulation Element), postal service, et cetera.

20.A FIRE SERVICES

The City of Woodland Fire Department has 33 paid firefighters operating out of the City's three fire stations. Additionally, there are four paid staff officers, one Chief and three Division Chiefs. The City has seven fire engines; four 1250 g.p.m. structural pumpers and three 750 g.p.m. grass land pumpers, one 100-foot aerial ladder truck, one rescue/salvage truck, one 3,200-gallon tanker and one incident command vehicle. Fire response in Woodland is considered good and the City has a Class 3 fire insurance rating. (Important to the residents of Woodland is the insurance "class" in which each district ranks. The insurance classes run between one and ten, with the highest insurance rates found within Class 10. The ranking of the districts is determined by Insurance Services Office (ISO) according to the location of the fire hydrants; water pressure; type of firefighting equipment uses; staff number and training program; location of fire stations; and organizational efficiency.) The City's Fire Department may request assistance from the Davis and Willow Oak Fire Districts through mutual aid agreements among districts.

The City of Woodland's long-term plan for location of fire stations is as follows:

Station	Location
No. 1	Court and First Streets
No. 2	West and El Dorado Streets
No. 3	In the vicinity of Main Street and CR 101

This requires the relocation of Station No. 3 at 1125 East Street in order to provide improved coverage to the rapidly expanding eastern portion of the City.

The department's annual budget in 1987-88 is $2,082,343.00. The following is a list of equipment and personnel for the City of Woodland Fire Department:

EQUIPMENT

4 - 1250 GPM Structural Pumpers
3 - 750 GPM Grass Rigs
1 - 100' Aerial Ladder
1 - 3250 Water Tender
1 - Squad
1 - County Heavy Rescue Rig
1 - Yolo County Air Charging Unit

PERSONNEL

4 - Chiefs
33 - Suppression Personnel
25 - Volunteer Force

11 - Man per shift
9 - Man per shift minimum manning, supplemented by Volunteer Force

Within the planning area the average response time from the nearest fire stations to locations within the different planning sections is approximately two to four minutes.

Personnel within the department have advanced first aid and EMT 1 (Emergency Medical Technician) training. One person has EMT 2 training.

It is difficult to predict the additional equipment and personnel that will be needed to cover future development in the planning area. The department is presently working on the relocation of Station #3 to East Main Street and County Road 101 to provide better coverage in the east end of the city.

When new growth and development dictates the need for a 4th station in the northwest section of Woodland, they would be looking probably at a figure of $1.2 million to build and equip it, plus an additional $400,000 annually for manpower. To help augment these expenses, they have vigorously pushed for built-in fire protection systems in new construction and maintain an aggressive ongoing inspection program.

Fire hydrants are required every 300 feet along streets throughout the City. The City has a water supply system with a flow capacity of approximately 36,000 gallons per minute. At present, the peak load uses have reached 16,500 gallons per minute. Waterlines throughout the City have shut-off valves so that the line in a particular area may be sealed off in the event of a break or during repairs without affecting water service in the remainder of the City.

Five of the City's 21 wells are equipped with auxiliary diesel pumps which become operative during emergencies or a City-wide power failure. Auxiliary power for a sixth well is planned. Sufficient water would be available for firefighting and health purposes. The City Hall and the Police Administration building have diesel generators for use during power failures.

The City's sewer and storm drainage lines are gravity flow and would remain operative, barring a major rupture in the lines.

In addition, Yolo County has joined the universal emergency telephone "911" dialing system. Anyone requiring emergency help from firemen, police or the sheriff's department can register their "S.O.S." by dialing 911 from the nearest telephone. It is anticipated that eventually the County could include under the one number designation any number of its emergency service agencies such as "Suicide Prevention". The number of medical responses has greatly increased. Sixty percent of all runs are medical aid.

Other safety programs and features necessary to the protection of the community include the Police Department's services, emergency hospital care facilities and development requirements. The City enforces the Uniform Building Code which has established minimum standards for structures. The City has also adopted a fire sprinkler ordinance which requires "built-in" fire protection for certain kinds of uses. Fire sprinklers cost less then fire stations. Fire prevention takes less manpower then fire suppression.

In 1978, the Master Environmental Assessment of the City of Woodland concluded that future development, as envisioned in the Land Use Element of the General Plan, would pose a high fire risk and that an overall fire protection plan was needed. A Master Plan for Fire Protection was prepared in 1981 which addressed many of the concerns of the MEA. It pointed out, however, that the present locations of the City's two fire stations placed certain areas beyond the recommended response distance of one and one-half miles. Although the recent inclusion of the Springlake Fire Protection District's resources has changed the response distance in the southeast areas, the City still has a lack of adequate fire protection for present and future residential subdivisions in the northwest sector of the City's Sewer Service Area.

20.B POLICE SERVICES

The city of Woodland's general planning area is policed primarily by two agencies, the Woodland Police Department and Yolo County Sheriff's Department.

20.B.1 WOODLAND POLICE DEPARTMENT

The Woodland Police Department is a full service police department consisting of the following three divisions:

Administration is commanded by the Chief of Police who is responsible for developing and administering policies and procedures for the Woodland Police Department. There are two programs within the Administrative Division, Crime Prevention and Youth Services.

Crime Prevention is responsible for developing, coordinating and implementing a City-wide crime prevention effort.

Youth Services is responsible for developing, coordinating and implementing programs designed to educate school age children on good citizenship and children victimization. This program is also responsible for juvenile referrals, dispositions, diversion and community relations involving youth and the Woodland Police Department.

Operations Division consists of uniformed patrol, investigations, traffic, police reserve program and training.

The Uniformed Patrol Program provides 24-hour uniformed services for emergencies, traffic control, preliminary investigations, arrests and other called-for services from the community.

The Traffic function consists of one sergeant and two officers assigned to motorcycle traffic enforcement and investigation responsibilities.

The Investigations Program is responsible for evaluating all reported crimes and conducting follow-up investigations to determine solvability factors, the potential for criminal apprehensions, recovery of stolen property and other related clearances. Investigators prepare cases for prosecution in court and provide crime scene identification services in those instances where major crimes have occurred.

Y.O.N.E.T. -The Yolo Narcotics Enforcement Team has two Woodland police officers assigned to the county-wide narcotics task force.

Training and Personnel -This program is responsible for the development and coordination of all department training. The Personnel function coordinates recruitment and testing of department personnel and is responsible for background investigations.

Support Operations consists of the Police Department Records Section, Property Room and Evidence Processing and supervision over support personnel. The function of this program is to provide support services to the department in the areas of vehicles, equipment, facility maintenance, purchasing and budget development, implementation and review.

The Records Section maintains and purges records, provides record security and supplies statistical data to the department and the State of California.

The Property Program is responsible for the storage, processing and release of all property handled by the department.

The Woodland Police Department in 1986 had 47 sworn personnel and services a population of 34,096. By the year 2002, the City of Woodland will have a population of 47,000. The Police Department will consist of approximately 65 sworn officers. The 18 additional officers will enable the Police Department to maintain existing service levels. Any additional programs would increase the number of personnel needed.

Currently, the Woodland Police Department has 12 civilian employees. By the year 2002, the department will increase civilians by at least five positions for a total of 17 civilian employees. Current trends in law enforcement tell us civilianization may occur more rapidly than this projection.

The police fleet would be increased by six vehicles (to support 23 additional employees) in order to maintain our current ratio of employee to vehicle.

The current police facility must be significantly enlarged or it may be necessary to build a new facility in order to provide the additional square footage to accommodate the increase in Police Department personnel.

The figures represented in the projections outlined in this report represent an increase of approximately 38 percent in the Police Department. The percentage increase corresponds to the increase the City will experience by the year 2002.

20.B.2 YOLO COUNTY SHERIFF'S DEPARTMENT

Presently and for the near future, there will generally be three (3) patrol units, twenty-four (24) hours a day, serving the general planning area. These same patrol units will cover the area surrounding Woodland, north to Knights Landing, east to the Sacramento River, south to the Davis area and west to Madison. Each patrol unit is manned by one (1) Deputy. This department wishes to maintain a 1.4 to 1,000 officer to citizen ratio.

The Yolo County Sheriff's Department and Detention Division is presently located in planning area "C". In the near future, the Detention Division will be located in the southern portion of planning area "J".

The Sheriff's Department headquarters is only several blocks from the Woodland Police Department. As a result of this, the sheriff's response time to a call is basically the same as the Police. The Patrol Division advises, depending on the patrol unit's location, their response time can be from two minutes to 15 minutes; an average of 10 minutes would be a conservative estimate.

The Sheriff's Department is budgeted for approximately $6 million plus. No funds are budgeted to the City of Woodland. The Animal Control Division and Detention Transportation Services are provided to the city on a contractual basis.

The Sheriff's Departments have jurisdiction anywhere within their respective counties, but traditionally, do not exercise those powers when the incorporated areas have their own law enforcement agencies. This agency does not respond to calls within the City of Woodland's jurisdiction unless requested. The Woodland Police Department and Yolo County Sheriff's Department have a good working relationship.

The Yolo County Sheriff's Department does not provide any direct services to the City of Woodland other than those contractual services previously mentioned. Services such as Detention and Transportation, Civil Division and Coroner's Division are available to members of the community.

20.B.3 CALIFORNIA HIGHWAY PATROL

The Woodland Area office of the California Highway Patrol is currently staffed by 22 road patrol officers and three sergeants. The Area Commander is a Lieutenant. During typical day and afternoon shifts two patrol cars cover I-5 from the Sacramento River to the Colusa-Yolo County line, I-505 from Dunnigan to Winters, and all other roadways in the northern half of Yolo County. After 11:00 P.M. a total of two cars patrol all of Yolo County. So it is fair to say they serve the planning area with one patrol car at most times.

The CHP's office is located off County Road 102 just south of I-5. Response times to the different planning sections would be from one to six minutes. However, it should be noted that it would be rare for a patrol car to respond from the office, as the officers are usually in the office only during the first and last 15 minutes of each shift.

The jurisdiction of the Woodland Area office of the California Highway Patrol includes traffic law enforcement and related services on all freeways in Yolo County plus all public roadways outside the limits of the incorporated cities. As allied agencies, the California Highway Patrol and the Woodland Police Department enjoy a cooperative relationship, frequently providing back-up protection, other types of assistance, and the sharing of information.

As a major statewide law enforcement agency, the California Highway Patrol provides a variety of services to the general Woodland area. The primary mission is management and regulation of traffic in an effort to achieve safe, lawful, and efficient use of the highway transportation system within Yolo County. The California Highway Patrol has a secondary mission of supporting local law enforcement by assisting in emergencies which exceed local capabilities. There are other services offered to local law enforcement agencies, such as the use of the Valley Division Multi-Disciplinary Accident Investigation Team (MAIT), use of the regional helicopter based at McClellan Air

Force Base, the inspection of large commercial vehicles involved in accidents, by a commercial enforcement officer, a motor carrier inspection specialist, and the determination of speed from skidmarks by an accident investigation follow-up officer.

Increased development in and around Woodland will cause an increase in demand for CHP services in accident investigation, drunk driving enforcement, other traffic law enforcement, other traffic management services, and assistance to motorists. This will eventually result in the addition of more traffic officers. It is not possible to estimate how much growth CHP would experience, when it would occur, or how much it would cost.

The California Highway Patrol has never used a staffing formula to maintain a certain ratio of officers to population. Instead, personnel strengths have been adjusted for a variety of factors, such as the number of accidents, the number of injuries and fatalities, miles of roadway patrolled, response distances and times, millions of miles driven by the public, percentage of accidents caused by drinking drivers, and how many miles of Interstate highways there are to patrol (Federal law mandates 24-hour coverage on these roadways).

20.C WATER SERVICE

WATER SYSTEM

The water system includes 21 wells and a water main distribution system. A Water Master Plan has been adopted, which includes both facilities upgrade and expansion, that stated the entire system is in very good shape. The system upgrade will be financed through user rates while the expansion will be funded with new users paying a water connection fee of $2,970 per acre. To complete the entire water system within the next 25 years will cost approximately $2 million.

Since the wells are placed throughout the system, expansion can occur rather easily on an area by area basis. Growth will have an incremental impact that can be handled with only minor problems.

SYSTEM DESCRIPTION

1. Production Facilities:

	Existing	Ultimate
a. Wells	21	23
b. Standby power	5	9

2. Water Consumption:

a. Average daily use	9 mil. gal. per day	
b. Peak month - July		
Average daily use	32 MGD	53 MGD

There are several ISSUES facing the City of Woodland relative to water service as outlined below:

1. The phasing of water production needs and provisions for standby power.

2. Water distribution needs.

3. Water quality.

4. Availability of financial measures to provide capital improvements to the system as well as the operation and maintenance of the system.

5. Fire protection needs --adequate supply of fire hydrants and adequate water pressure.

The following are CONSIDERATIONS which must be recognized in understanding the City's water system:

1. The water system is based on peak daily/hourly demand and not average daily use.

2. The entire system consists of wells and is thus completely dependent on ground water.

3. Drought situations lower the ground water but recharge usually occurs within a couple of years.

4. Residential water useage is less than the agricultural demand for the same acreage.

5. The operation of the water system is 100 percent financed through user fees and charges.

There currently are no significant PROBLEMS with either water quality or quantity.

The City's FUTURE PLANS for this service include:

1. Making improvements to the existing system, including:

   a. Installation of additional fire hydrants and water lines, and undertaking necessary well improvements.

b. Installation of a telemetry system and two standby power units.

The estimated cost of $1.1 million for these improvements is to be paid by user fees.

2. Expanding the system by requiring the installation of four (4) new wells, two (2) with standby power.

The estimated cost of $800,000 for these improvements is to be paid through the collection of connection fees from new users.

20.C.1 WATER SERVICE ASSUMPTIONS

The water service for Woodland is presently dependent upon a continued supply of ground water and an adequate well and transmission system. The current system is designed for expansion to meet the community's needs assuming the supply remains.

20.D STORM DRAINAGE

The storm drainage system includes a collection system of catch basins, lateral and trunk piping and a pumping plant at the settling basin adjacent to the Yolo By-Pass. A Storm Drainage Master Plan has been prepared and adopted. This plan identifies improvements to be made over the next 25 years that will cost approximately $25 million. The financing method to be used has not yet been developed.

Growth will have a significant impact on our existing storm drainage system. Incremental improvements are difficult to accommodate because of the need for large trunk lines and pump station improvements. This problem is currently being addressed by the use of temporary holding ponds.

20.D.1 SYSTEM DESCRIPTION

1. Pumping plants:

   Two pumping stations located on E. Main Street adjacent to the Cache Creek Settling Basin.

2. Trunk lines:

   Four major trunk lines are located on Kentucky Avenue, Court/Beamer Streets, East Main Street and Gibson Road.

ISSUES discussed in the draft Master Plan focus on:

1. What is the level of storm protection needed in the existing urbanized area. Need to select a two-year or a 10-year storm frequency level of protection.

2. Determining the type of pumping station to be built to replace the existing small pumping stations.

3. Phasing of improvements.

4. Method of financing operations and maintenance needs as well as capital improvements.

The following CONSIDERATIONS have to be examined by the City in analyzing this issue:

1. The entire City area drains from west to east. Thus, the area to the east is easier to develop. Once pipes are installed, however, the level of protection for the west area is established.

2. How does the initial cost of capital improvements relate to the long-term cost of maintenance.

3. The Corps of Engineers is proposing to raise the settling basin levees 12 feet. This greatly impacts the design of a pumping station.

4. The runoff from commercial and industrial areas is much greater than that of residential areas, yet all pay the same acreage development fee.

5. Presently no user fees exist for system operation, maintenance or upgrading.

PROBLEMS associated with the provision of storm drainage involve the following:

1. Lack of adequate local collection, trunk system and pumping station capacity to collect and dispose of runoff from the present urbanized area.

2. Lack of a financing method for the operation and maintenance expenses of the storm drainage system.

3. Lack of a financing method for the capital improvements required to upgrade and expand the existing system. The past practice of "pay as you go" will not provide sufficient funds for needed improvements.

4. The operation of invert siphons and existing curb inlets create local street flooding.

FUTURE PLANS for the storm drainage services to be undertaken by the City include:

1. Adopt the Storm Drainage Master Plan.

2. Establish storm drain enterprise operation.

3. Implement first phase of the needed improvements.

4. Provide funding for the first phase of the improvements which is estimated to cost $16 million.

20.E SOLID WASTE DISPOSAL

Yolo County operates a central landfill northeast of Davis used by all jurisdictions in the County except the University of California at Davis which has its own facility.

a. 720 acres in size.

b. Will reach capacity in the year 2024.

c. 75 acres used at the present.

d. City of Sacramento Scavanger Company also uses facility and accounts for 25 percent of tonnage deposited at landfill.

e. Methane Recovery Project will start next year. Will last 20 years and net $7 million for the County.

Source: Letter from Yolo County Public Works

An average of 850 tons of garbage are deposited per day at the landfill. Daily cover requirements are 0.155 C.Y. cover per cubic yard of garbage deposited. Cover material is obtained onsite at the landfill.

The amount of garbage brought in daily is directly proportional to the population and development. The projected life of the landfill is thirty (30) remaining years. Additional land is available and reserved to the north side of the landfill for future expansion.

Existing recycling at the landfill includes:

1. WOW paper (office white paper).
2. Newspapers.
3. Aluminum Cans = scrap aluminum.
4. Glass bottles = scrap glass.
5. Used motor oil.

Materials accepted are garbage, yard refuse, tree clippings, household appliances, tires, concrete, sand and rock, earth, plastic, scrap lumber, cannery waste, septic waste and organic waste.

Materials not accepted at the landfill are PCBs, radioactive material, poisons, flammable liquids and solids, corrosives, pesticides, bio-chemicals, well drilling mud, nuclear wastes, and explosives.

The County of Yolo has prepared and adopted the Yolo County Solid Waste Management Plan on September 23, 1977. The City of Woodland has also adopted the plan. Key elements to the Plan are as follows:

Purpose

The purpose of the plan is to provide a vehicle that coordinates a solid waste management program meeting the storage, collection, disposal, resource recovery, and reduction of waste generation needs of Yolo County.

Summary

The Primary elements of the plan are the Solid Waste Management objectives:

(a) Provide Adequate Services: collection, disposal and resource recovery.

(b) Protect the Public Health.

(c) Prevent the creation of nuisances.

(d) Reduce waste generation.

(e) Conserve natural resources and energy.

(f) Provide for resource recovery from solid waste.

(g) Prevent degradation of the quality of the environment.

The goal of the plan is that all solid waste management practices in Yolo County be directed in a manner that will assure results consistent with the planned objectives.

The plan identifies existing wastes, and attempts to identify and quantify future wastes through the year 2010.

20.F SEWAGE DISPOSAL

Sanitary Sewer: The City is served by three trunk mains, a 24-inch diameter on East Gibson Road, a 24-inch diameter on East Beamer Street and a 27-inch diameter on East Kentucky Avenue.

The City proper is served by a network of sanitary sewer lines that vary in diameter from 24 inches to six inches all of which are gravity lines. The sanitary sewer does not handle surface drainage water.

All of the domestic sewage is treated by ponding at three different geographical sites which are located east of the City.

A new Wastewater Facility Master Plan was recently completed and adopted.

The sewer system includes a collection system and a wastewater treatment plant. The master plan includes a discussion of both improvements to and expansion of the existing facilities. The collection system is in relatively good shape. Approximately $6 million will be required over the next 25 years to upgrade and expand the existing sewage collection system.

The wastewater treatment plant is in need of major modifications to improve its operation and bring it into compliance with State standards. Construction has been started on the $10.5 million upgrade of the treatment system.

Additional improvements will be required in 1995 ($5 million) and 2005 ($5 million). All upgrade costs will be paid for by user fees while the system expansion will be financed through sewer connection fees. The current sewer connection fee for a single family dwelling unit is $1,370.

SYSTEM DESCRIPTION

1. Wastewater treatment plant:

a. Existing flow	4 MGD
b. Existing capacity	3 to 4 MGD
c. Ultimate required capacity	10.6 MGD

20.F.1 SEWAGE SYSTEM

The Sanitary Sewer System

The sewage transmission system has three interceptor lines that run in an east/west direction along Kentucky Avenue, Beamer Street and Gibson Road. Each of these three lines was constructed and sized to meet the gravity flow requirements of a population of approximately 15,000 people. The combined capacities will therefore serve a population of approximately 45,000 people. Any areas not served by these existing lines will require the construction of new interceptor trunk lines and branch sewer lines (laterals).

20.F.2 ASSUMPTIONS

Significant changes have been made to the City's wastewater treatment system since the Woodland Area General Plan was adopted in 1979. Additional ponds are planned which will provide treatment capacity for a population of 58,000 people. It should be pointed out, however, that this capacity is not planned for water intensive industries.

20.F.3 ISSUES

The following list outlines issues which require attention by the City in analyzing the sewer system:

1. Determination by the State of California as to the wastewater treatment plant discharge criteria.

2. Determination of the type of treatment process to be used now and in the future.

3. Determination of flow rates to the wastewater treatment plant. Residential density and industrial uses greatly impact sewage flows.

4. Collection system analysis of inflow/infiltration can reduce sizes.

5. Method of financing upgrade and expansion.

20.F.4 CONSIDERATIONS made by the City in understanding the service area:

1. Both high strength and high flow industrial uses have an adverse impact on our treatment facilities.

2. The master plan assumes certain flows for industrial and commercial areas. Deviations from the existing land use designations could greatly affect projected flows.

3. User fees and connection charges must fund 100 percent of the operational and improvement costs.

20.F.5 PROBLEMS related to the sewer system which must be resolved include:

1. Operation of existing wastewater treatment plant.

2. The need to match growth and sewage flow to projections.

3. The time and cash flow requirements relative to the four to five-year load time for any future plant expansion versus one to two year turnaround for new developments. This may result in short term service deficiencies. The City Council will need to evaluate new development proposals to determine appropriateness of projects which fall within this category.

4. Long-term financing and its impact on user rates and sewer connection fees.

20.F.6 FUTURE PLANS for the provisions of sewer services will require:

1. Implementing the Wastewater Facilities Master Plan with first stage to be completed within two years.

2. Financing of this phase of the improvements is estimated to cost $14 million.

20.G SCHOOLS

Education for Woodland residents is provided by several entities, both public and private for all age groups.

20.G.1 WOODLAND JOINT UNIFIED SCHOOL DISTRICT

The Woodland Joint Unified School District is the major provider of educational services for the City of Woodland. The District covers an estimated area of 305 square miles. Its current enrollment is 7,152 students including special education. The schools in the District include:

	Range of School Size
Eleven Elementary (K-6)	173-519 students
Two Junior High (7-9)	709-765 students
Woodland Senior High (10-12)	1514 students
Woodland Community High	100 students
Adult Education	875 students

Greengate School for Exceptional Children operated by the Yolo County Superintendent of Schools has an enrollment of 196 students.

Estimated enrollment for the District in 1987-88 is 7,341 and 7,550 in 1988-89.

The District is currently purchasing portable classrooms to accommodate the increasing student enrollment in the next school year. The District has constructed a new 10-acre school/park on the east side of Woodland which is intended to house 600 elementary children. This school was financed solely through fees charged on new residential units. The District currently charges mitigation fees on all new development. This new school will satisfy the District's need for school facilities to accommodate the student population generated

by Phase One of the Woodland Area General Plan. Development of Phase Two and Phase Three of the General Plan will require the financing and construction of additional school facilities. The City and the School District continue to cooperate with each other to insure that long-range financing can be provided for future facilities of the District.

There are presently overcrowding problems in the District. The District is using portable classrooms, redirecting students, transporting students to other sites, and using smaller work stations as regular classrooms to alleviate the problems.

20.G.2 PRIVATE SCHOOLS

The City of Woodland is also home to six private schools: Woodland Christian School, Holy Rosary School, Liberty Christian Academy, Montessori Children's House, Nazarene Christian School and Seventh Day Adventist School. These schools service grades ranging from kindergarten through twelfth grade depending on the individual school curriculum. There are approximately 800 students enrolled in the private schools in Woodland.

20.G.3 COLLEGES

Yuba Community College

Yuba Community College provides community college services to Woodland residents. A Woodland Center of Yuba College is presently located on leased property at California and West Cross Streets. They presently have an estimated 1,100 students per semester attending both day and evening divisions.

The Community College has purchased 120± acres at Gibson Road and CR 102 for the construction of a new center. Construction on the first phase commenced in the 1988-89 school year with relocation of the existing campus to occur in the Summer of 1990. Further expansion of the center will occur as State funding becomes available.

20.G.4 CHILD CARE

Child care is a major concern for many Woodland families. National statistics show that 50 percent of the mothers with children under six are in the labor force. For children 6-17 years, approximately 67 percent are in the labor force. In 1983, child care centers and day care homes had a capacity for 748 children. These figures include children in both family day care homes (which is care provided in someone's home) and child care centers (which is care provided in a group setting). The majority of child care services available provide a choice for parents of pre-school children. For parents with school age children, the choice is more difficult. State funds have recently become available for latch-key child care programs, the school age child who is home alone before and after school. The Woodland Joint Unified School District is contracting with Kids on Kampus, a non-profit organization, to provide child care for the latch-key child

at two schools in the district. The decision was made after a survey was conducted in the District concerning child care needs. Additionally, the City of Woodland has started a pilot program of after school care at Freeman School on the north side of Woodland.

As the number of young children and working mothers continues to rise, the demand for child care facilities in Woodland will continue to grow. It is necessary in planning for the future of Woodland that a careful examination of needs at the local level --ages, location of facilities, hours, cost and type of care be conducted to effectively meet the growing demand.

20.H LIBRARY

The library is the major provider of information that remains free and accessible to everyone. The Woodland Public Library staff and Board of Trustees are planning for the future while maintaining the level of traditional library service that Woodland has come to expect.

Currently the Woodland Public Library serves residents of the City of Woodland as well as nearby County dwellers. Almost 13,000 people hold library cards and check out close to 190,000 volumes a year. The library is open 60 hours a week, including six days and four evenings. The facility is divided into two floors with the Children's Room and Literacy Service on the ground floor and Adult Services on the upper level. Staff includes three professional librarians, one part-time librarian and 11 full and part-time support staff, equivalent to 10 full-time employees. The Literacy Service has a separate staff of three half-time employees.

The regular library staff provides all public services, i.e., reference, children's services, a Spanish language collection and circulation, as well as the technical work necessary to order, catalog and process over 3,000 books per year. The library has about 120,000 books and other materials in its collection. They subscribe to 250 magazines and subscription services. Materials are circulated through a computerized system that the City shares with the Sacramento Public Library. This system gives library users access to the entire Sacramento Public Library collection, as well as dial-up access to the Roseville and Sacramento State University collections. It greatly increases the speed of interlibrary loans as well as reducing the amount of manual work involved in the circulation of materials. The Library today is providing all the services possible.

The Woodland Public Library feels it will be able to meet any increased demands for materials in the areas of adult non-fiction, adult fiction, and juvenile for probably 10 to 15 years. Construction is completed on the building expansion program which resulted in approximately 23,000 square feet of library space and community meeting area.

21.I PARKS AND RECREATION

The City of Woodland Parks and Recreation Department is responsible for providing park and recreation facilities and recreation programs for Woodland citizens.

21.I.1 NEIGHBORHOOD PARKS

Neighborhood parks should serve an area of a three-eighths (3/8) mile radius and service a population not to exceed 3,000 people. Neighborhood parks should be approximately ten (10) acres in size and reflect the recreational needs of the people it serves. It is recommended that neighborhood parks be developed adjacent to elementary schools. The following Woodland parks are classified as neighborhood parks:

Name	Location	Acreage
Beamer Park	Palm and Woodland Avenue	2.18
Campbell Park	Thomas and Henderson	6.65
Christiansen Park	Beamer and Walnut Street	2.59
City Park	Cross and Cleveland Street	3.92
Crawford Park	College and El Dorado Drive	10.00
Everman Park	Fourth, Sixth, Cottage and Gum	3.39
Ferns Park	W. Southwood Drive and Ashley Avenue	10.00
Freeman Park	Fifth, Main and Court Street	2.25
Harris Park	Imperial and Ashley Avenue	6.11
Southland Park	College and Casa Linda Drive	2.67
Tredway Park	Sixth Street	1.57
Woodside Park	Cottonwood and W. El Dorado Drive	10.00
Prairie School/Park	Matmor Rd & Stetson Street	3.00
	Total Acreage	64.33

21.I.2 RECREATION FACILITIES

Recreation facilities are areas that serve special user groups such as baseball, soccer, swim pools, etc. Recreational contests, leagues and special activities are conducted at these facilities. Recreation facilities are not substitutes for neighborhood parks. The following sites are classified as recreation areas:

Name	Location	Acreage
Buchignani Field	E. Gum Avenue	1.42
Camarena Field	Beamer Street	4.13
Clark Field	Beamer and Grand Avenue	3.56
Dubach Ball Park	I-5 and SR113	15.00
Greenbelt Park	Mariposa to N. Cottonwood Street	7.46
Holding Pond Park	W. El Dorado Drive	11.00
Senior Center	Second Street and Lincoln Avenue	1.00
Storz Soccer Field	CR 101	16.00
Woodland Community Swim Center	West Street	2.40
Woodland Municipal Pool	Elm Street	1.00
Woodland Regional Park	CR25 and CR102	160.00
Yolano Recreation Area	Yolano Drive and Lemen Avenue	5.00
	Total Acreage	227.97

21.I.3 FUTURE PARKS NEEDS

The development of new park and recreational facilities must keep pace with the growth of our City. Adequate land must be set aside for the future development of parks. The Parks and Recreation Element addresses this issue under "Goals, Objectives, Policies and

Implementation Measures". The City must provide for parks and facilities to serve the needs of the community, individual neighborhoods and special recreational interests. Objective No. 2 under "Goals, Objectives, Policies and Implementation Measures" states that the City shall, "2.2 Study the overall needs of the City for parks and recreation and plan for the acquisition and development of park areas that are consistent with the City's General Plan".

21.I.4 FUTURE PARK PLAN

The City Master Plan for parks indicates a need for future neighborhood parks in Planning Area "A" and "J". See attached plan. Recreation facilities will be developed in Planning Area "I" for soccer. The Woodland Greenbelt Park will continue to develop in Planning Area "A".

A support system of water and sanitary facilities is needed at the Woodland Regional Park. Adult softball (three fields) and soccer (four fields) must be developed in the next five years to meet the needs of these special interest groups.

The need for a community center that would serve youth through adults as a recreational facility should be addressed in the next five years.

21.I.5 SUMMARY

Currently inadequate indoor facilities exist for conducting recreation programs for all age groups. School facilities are currently being utilized by the City for programs and are being used at their maximum availability. The priority need for the City of Woodland Parks and Recreation Department is a facility for conducting a teen drop-in program and special interest classes.

20.J CEMETERIES

1. Woodland Cemetery - 800 West Street

This cemetery consists of 21 acres. It was developed as a private cemetery and is now City owned. Many plots are sold as family units. Established in the 1840s, it has 21 acres and is almost completely occupied with only 300 vacant plots remaining. The cemetery will soon be expanded and vacant space, including interior roadways, will be converted to burial plots to include space for 2000 additional occupants. Source: John Vallerga, 11-87, manager

2. Catholic Cemetery

Established in the late 1800s, this cemetery is only available to Catholic families. It consists of 4 acres and is about 2/3 full. Two additional acres have been designated outside the existing cemetery for future expansion. Source: Ramona Melin, 12-28-87, Holy Rosary Church.

3. Monument Hill Cemetary - Road 22

This cemetery located west of the city limits consists of 42 acres with 6 acres under lawn with 2-1/2 acres occupied. The cemetery has a total of 3658 internments including cremations. There is approximately 3000 unoccupied spaces under lawn and the remaining 36 acres for further development.

Source: Bob Seney, 11-87, manager

20.K SOCIAL SERVICES

The following is an overview of the services offered by the Yolo County Department of Social Services. Most of these services are common to Social Service agencies statewide.

The department's budget varies with caseload size, State allocation formulas, new mandates, and the availability of county funds. For fiscal year 1986/87 the total operating budget is approximately thirty-three million ($33,000,000).

The department is unable to project what impact increased development would have on the need for their services by Woodland residents.

The services offered include:

I. The Income Maintenance Programs.

A. Aid to Families With Dependent Children (AFDC) Mandated.

AFDC is the largest and most costly aid program and is what most people know as "welfare". It is mandated by the Welfare and Institutions Code (W&I), Division 9, Section 10000. Counties are required to administer the program, determine eligibility and payment levels (up to the maximums), keep statistical data and issue benefits. Persons eligible are family groups whose income and resources are within the established limits, and children in foster care. County costs are twenty-five percent (25%) of the administrative costs and five percent (5%) of the payments made to recipients.

B. Food Stamps -Mandated.

The Food Stamp Program is federally mandated by the Food Stamp Act and is designed to safeguard the health and wellbeing of low income persons. The County Share of cost is twenty-five percent (25%) of the administrative costs.

C. Medi-Cal -Mandated.

The Medi-Cal Program is county administered in accordance with a State plan under Title 22, California Code and W&I Code Sections 14000 through 14066. Recipients of AFDC are automatically eligible for Medi-Cal. Other persons must apply and if found eligible are certified for one year. County costs are 25 percent of administering the program.

D. General Assistance -Mandated.

Welfare and Institutions Code Section 17000 states that counties provide support for all incompetent poor and indigent persons who are not supported by friends or relatives, their own means or who are excluded from other aid programs. Each county establishes its own eligible criteria and payment levels and the aid payments and administrative costs are 100 percent county funded. Counties are permitted to establish policies and programs that require able bodied recipients to participate in work projects and to pay assistance in cash via voucher system or vendor payments.

Under the State Supplement program, counties can obtain reimbursement for county funds paid while the recipient is awaiting approval of his/her SSI/SSP benefits per Public Law 93-368. Funds received reduce General Assistance costs by a greater amount than the cost of operating this program.

E. Special Circumstances -Mandated.

Welfare and Institutions Code Section 12550 dictates that counties establish eligibility and payment of benefits for State Supplemental modifications, replacement or repair of household items, and prevention of foreclosure. Administrative and benefit costs are funded through a special allocation.

II. Social Service Programs.

California has designated twenty-one (21) social service programs for which Title XX monies can be used. These service programs have been divided into mandated and optional services. The eight mandated programs required by every California County are described below. The fund Allocation formula and the county's share of cost varies with the program.

A. Information and Referral (I&R)

Those activities provided by social services staff (or contracted agencies) which enable persons to have accurate and current knowledge about available public and private resources to help alleviate socioeconomic and health problems; and provide short term help to enable persons to identify and gain access to resources appropriate to their needs. This service is available to all persons regardless of income.

B. Emergency Response Program

This program is a response system which provides immediate in-person response, 24 hours a day, seven days a week to reports of abuse, neglect, or exploitation. This service is provided without regard to income. The Emergency Response Program (ER) is the initial intake point for all children entering child welfare service programs.

Program objective is to provide initial intake services and crisis intervention to maintain the child safely in his or her own home or to protect the safety of the child by removing the child if the child cannot be safely maintained in the home.

C. Family Maintenance Program

This program is designed to provide time limited protective services to prevent or remedy neglect, abuse, or exploitation while the child remains in the home. Family Maintenance (FM)

services are provided without regard to income. The program objective is to prevent the separation of children from their families and to reduce the need for foster care placements. The Family Maintenance program encompasses both voluntary services to families who consent to such services to remediate problem areas as well as voluntary services whereby the minor is allowed to remain in the home under Juvenile Court jurisdiction and supervision.

D. Family Reunification Program

This program is designed to provide time limited foster care services to prevent or remedy neglect, abuse, or exploitation when the child cannot remain safely at home and needs temporary foster care services while services are provided to reunite the family. Program objectives are to prevent, if possible, long-term foster care placement by returning the child safely home whenever possible. State regulations impose frequency of contacts with minors, parents, and foster parents. Statutes dictate the length of time reunification services can be provided. And the frequency whereby cases must be reviewed by the Juvenile Court.

E. Permanent Placement Program

This program is designed to provide an alternative permanent family structure for children who, because of abuse, neglect, or exploitation, cannot safely remain at home and who are unlikely to ever return home.

F. Out-of-Home Care Services for Adults

Activities and purchases provided to persons 18 years of age or older who cannot remain in their own home or other independent living arrangements and who are in or being considered for placement in licensed or certified facilities. The purpose of the activities is to assist them as needed with placement, care, adjustment, discharge, or transfer to or from community care facilities, intermediate care facilities, nursing homes, hospitals and other institutions. Out-of-home services for adults are provided to recipients of SSI/SSP and to other adults who are income eligible.

G. In-Home Supportive Services

Chapter 69 of the Federal Omnibus Budget Reconciliation Act of 1981, mandates the provisions of In-Home Supportive Services.

The IHSS program provides assistance to those eligible aged, blind, and disabled individuals who are unable to remain safely in their own homes and who, without the assistance, would require out-of-home care. It also enables those eligible persons who are institutionalized to return to an independent living arrangement if appropriate.

H. Protective Services for Adults

Those activities and purchases by Social Services staff to prevent or remedy danger to individuals 18 years or older who are unable to protect their own interests, were harmed, are threatened with harm, or caused physical or mental injury as a result of action or inaction by another person or their own actions due to ignorance, illiteracy, incompetence, or poor health, neglected or maltreated by others; lacking adequate food, shelter, or clothing; deprived of entitlement due them; exploited of their income or resources. Protective services are provided to all adults in need without regard to income.

The thirteen (13) remaining optional programs include:

- Special care for children in their own homes
- Home management and other Functional Educational Services
- Employment/Education/Training
- Services to Alleviate or Prevent Family Problems
- Sustenance
- Housing Referral Service
- Legal Referral Service
- Diagnostic Treatment Services for Children
- Special Services for the Blind
- Special Services for Adults
- Services to Disabled Individuals
- Services for County Jail Inmates

III. Family Day Care and Foster Family Licensing - Optional.

Licensing is not a mandated County Welfare Department function. However, the purpose of these programs is to protect the legal and human rights of children placed in day care or foster homes and to assure appropriate services are provided. Community Care Licensing provides full funding under a contract with the local County Welfare Department for such activities.

IV. Training Programs.

A. Food Stamp Employment and Training

This program is mandated by public law 99-198 and requires all able bodied non-exempt persons to participate in a program designed to assist persons with job skills in finding employment and those without skills to obain training. The administrative costs of the program are funded by block grants. Counties are responsible for paying twenty-five percent (25%) of the reimbursements made to participants for the out of pocket expenses incurred due to their participation in the program.

B. Greater Avenues to Independence (GAIN)

The GAIN program is mandated by the State. Each county develops its program based on the current needs of its client population, private industry and anticipated job market. Able bodied, non exempt Aid to Families with Dependent Children Recipients are required to participate in the program. Yolo County's GAIN Program offers a wide variety of training and educational components designed to address client's needs for remedial education as well as specific job skills. The program began November 1, 1987. Funding for the program is from state funds with no required county match.

V. Welfare Fraud Investigation - Mandated.

Chapter 20 of the Operations Manual, Section 20-005.2.1 mandates that each county establish and maintain a Special Investigative Unit of trained personnel. Counties with AFDC caseloads of 1,000 or more maintain a Special Investigative Unit and the Investigators are Peace Officers.

The 1983/84 State Budget Act mandates all counties with more than 350 combined Aid to Families with Dependent Children and Non Assistant Food Stamps (AFDC and NAFS) applications per month have an Early Fraud Detection and Prevention Program.

In 1984, Senate Bill 1379 mandated that each county conduct Asset Clearance Investigations. Investigation activities are funded by the State.

VI. Optional Programs.

A. Youth and Family Services

This program is supported by AB 90 subvention monies. Program focus is delinquency prevention, parent-child conflicts, behavioral problems, runaway behavior, school truancy, and curfew violations. Social Worker support is provided for the Midtown Schools supplemented by services provided by Diogenes under contract.

B. Veterans Services

Veterans Services are provided by one staff person who advocates for veterans and their dependents to obtain various benefits. This is done through filing claims, counter claims, and requests for waivers of alleged overpayments.

VII. Number of Cases.

Table 20-1 shows the number of cases for various programs that were handled by the department. This list represents both residents from Woodland and Yolo County.

TABLE 20-1

	Woodland Only	Total County
Food Stamp	3,951	8,264
AFDC	3,725	8,660
Foster Care	241	260
General Assistance	203	380
Medi-Cal	6,766	11,151
Emergency Asst.	15	27
Refugee (01)	4	29
Special Circumst.	1	1
Licensing		423
Child Protective E/R	102	223
Substitute Payee	47	96
Adoptions	20	20

Utilities

21. UTILITIES

21.A GAS SERVICE

The City of Woodland is served by line 220, an 8" gas transmission line and line 172, a 20" gas transmission line. These transmission lines feed two 6" high pressure main feeders in Woodland.

One feeder starts at East Main and County Road 101 and goes west to East Street, the second feeder starts at Gibson and C.R. 101 and goes west to East Street. From these feeders, the City of Woodland is served with 6", 4", 3" and 2" mains throughout the city.

The present transmission is sufficient for any future growth within the planning area. However, PG&E does anticipate a need to reinforce their existing distribution mains on a small scale on an as-needed basis.

Number of Customers		Annual Usage
Residential	11,937	723,970 Therms
Commercial	993	320,750 Therms
Industrial	7	35,270 Therms

21.B ELECTRIC SERVICE

The City of Woodland is served by a 96 mega watt substation with twelve 10 mega watt circuits radiating from it. This capacity is insufficient for future growth, especially for large scale projects. Plans will be developed on an as-needed basis to upgrade this capacity.

Number of Customers		Annual Usage
Residential	14,715	119,488,260 KWL
Commercial	2,457	117,730,570 KWL
Industrial	6	72,392,610 KWL

21.C TELEPHONE SERVICE

A profile of the present telephone network or projected needs for telephone service in the future within the city is proprietory information according to Mrs. Shein of the California Public Utilities Commission. Numerous requests to the Woodland Area Engineer, Mr. Richard Taz of Pacific Telephone, yielded no detailed information on the network. Mr. Rod Carmody, Area Manager of Pacific Bell Public Relations, stated further that information pertaining to level of service and telephone network profile is proprietory information. Mr. Carmody did say that Pacific Telephone would be able to meet any future demands on the telephone system.

21.D CABLE TELEVISION SERVICE

Sonic Cable Television provides information and entertainment to Woodland in the form of basic (off-air broadcast, local origination and satellite programming) and premium (HBO, Showtime, Pay-Per-View, etc.) cable television services.

Sonic currently serves 7,500 subscribers in Woodland.

The subscriber capacity of the system is approximately 15,000. About 50% of the houses currently served by the cable system are subscribers.

SCT continuously adds to the system as new housing stock is constructed. Individual projects are considered based upon the distance from existing plant, density of homes, construction costs, and projected subscribers.

SCT does not anticipate a problem meeting subscriber demand.

21.0 UTILITIES

SOURCES

Electric

PG&E: Shannon L. Cambel, New Services Representative, 12/87

Telephone

Pacific Bell: Richard Tax, Woodland Area Engineer II, 12/87
Rod Carmody, Public Relations, 12/87
Mrs. Schrin, Public Utilities Commission, 12/87

Cable

Sonic Cable TV: John Adams, General Manager, 11/87

Energy Conservation

22. ENERGY CONSERVATION

As prices of gas and electricity rise, households are being faced with increasing shelter costs. If the City is to address housing needs in the future and attempt to maintain the affordability of planned new units then energy costs need to be controlled/stabilized. Continued affordability can be enhanced by various energy conservation measures which can be instituted locally.

The City's Master Environmental Assessment discusses residential energy conservation measures. The techniques discussed may be used to support alternative and energy efficient subdivision design solar access, reduction of energy consumption in buildings through design and proper landscaping, public education programs and others.

The State now requires local governments to implement energy conservation standards for all new residential development. Under these requirements, new residential buildings must meet minimum building standards for heat gain and heat loss. Thus, the State has taken a major lead role in regulating residential building construction with respect to energy conservation. Local governments, however, may supplement minimum State requirements with a variety of local programs.

Because there is an adequate amount of subdividable land in the General Plan area there is an opportunity to require that new residential developments address energy conservation and promote solar access. There is also much that can be done to promote volunteer energy conservation, the use of solar water heating and energy conservation retrofitting of existing residential structures.

The use of solar panels for heating water has been popular in Yolo County. According to the Solar Syndicate located in Sacramento, it costs approximately $3,000.00 to install a solar water heating system composed of two 4' by 8' solar panels, 80 gallon hot water tank, pump, pipe, and insulation to meet the needs of a typical three bedroom home using about 100 gallons of water per day.

The installation of fairly simple energy conservation features - ceiling insulation, weather stripping, hot water heating insulation -- in existing residences can mean significant savings on monthly heating bills. PG&E at one time offered a "ZIP" weatherization program to customers in Woodland. Through the "ZIP" preogram, a PG&E customer could finance up to $3,500 in energy conservation measures at no interest. This program has now been discontinued. It may be appropriate for the City to consider a similar program for low income households.

Recreation

23. RECREATION

23.A RECREATION STANDARDS

The following chart summarizes the acreage requirements per one thousand population for outdoor facilities most commonly used by recreation enthusiasts. (Source: National Parks and Recreation Standards). Every attempt should be made by a municipality to offer all these facilities by adhering to these standards. The chart will also show the ratio between the number of existing facilities and the current population to illustrate how Woodland compares to the National Standards.

CHART 23-1

RECREATION STANDARDS

	National Standard	Woodland (including schools)
Baseball Diamonds (90 feet)	1 per 6,000	1 per 11,000 (3)
Softball Diamonds (includes Little League	1 per 3,000	1 per 1,000 (32)
Tennis Courts	1 per 2,000	1 per 1,500 (22) (8 lighted)
Basketball Backboards	1 per 500	1 per 575 (56)
Swimming Pools - 25 meter	1 per 10,000	1 per 35,000 (1)
Swimming Pools - 50 meter	1 per 20,000	1 per 35,000 (1)
Senior Center	1 per 10,000	1 per 35,000 (1)
Skating Rinks	1 per 30,000	0
Neighborhood Center	1 per 10,000	0
Community Centers	1 per 25,000	0

(Numbers in parenthesis refer to the total number of existing facilities.)

23.B INVENTORY OF EXISTING FACILITIES AND PROGRAMS

In developing a program to fulfill the recreational needs of a community, it is necessary to review the existing parks and recreation facilities and programs supplied by the City, the School District, the County, organizations and private commercial businesses. This inventory will provide the City with data to compare with the National Parks and Recreation Standards. This will enable the City to determine its deficiencies as well as its assets in terms of parks and recreation facilities. This inventory will need to be periodically updated to reflect the growth of the City and its changes.

Chart 23-2 lists the existing parks and recreation facilities by name, location, how land was obtained, year of acquisition and size of facility. All of these facilities are operated by the City of Woodland. Chart 23-3 describes the recreation facilities available at each park.

23.B.1 CITY RECREATION PROGRAMS

The City Parks and Recreation Department offers a broad range of recreational programs throughout the year for all age groups. During the summer, supervised programs are available at City parks. During the other seasons a variety of passive and active, organized and unorganized activities are held which in the past have included gymnastics, basketball, volleyball and baseball leagues, crafts, swimming classes, tennis lessons and programs for the handicapped. A list of the programs currently being sponsored by the City is shown in the Appendix. These programs may vary from year to year depending on the desires of the City residents and the availability of funds and personnel.

The Parks and Recreation Department also co-sponsors recreation programs and activities with the Woodland Community Art Center, the Yolo County Young Men's Christian Association (YMCA), local health clubs and hospitals.

a. Woodland Community Art Center

The purpose of the Woodland Community Art Center is: (1) to offer applied and performing arts that will meet the needs of all people in the community regardless of age, sex, race, creed and economic status and (2) to provide appreciation of creative and interpretive art through creative, educational, recreational, spectator classes, showings and lectures.

Facilities available at the Center which is located on North Street between College and First Streets include an art gallery, a crafts room, a dark room and a pottery room.

b. Yolo County Young Men's Christian Association

It is the purpose of the Young Men's Christian Association to offer programs to its membership that develop self-confidence and self-respect.

The YMCA sponsors programs such as Indian Guides, Hi-Y, Tri-Hi-Y, Junior Hi-Y, camping and informal education. The major facility at the Association Building is a large multipurpose room which serves the majority of their activities. The Parks and Recreation Department co-sponsors the recreational activities with the YMCA.

CHART 23-2

EXISTING PARKS AND RECREATION FACILITIES

Name	Location	Acquisition	Date	Acreage
Beamer Park	Palm Ave. & Woodland Ave.	Gift	1940-50	2.18 (1)
Campbell Park	Thomas St. & Henderson Way	Purchase	1965	6.65 (2)
Christiansen Park	Beamer St. & Walnut St.	School District	1946	2.59 (3)
City Park	Cross St. & Cleveland St.	Gift	1910	3.92 (4)
Crawford Park	College St. & El Dorado Dr.	Purchase	1974	10.00 (12)
Everman Memorial Park	Fourth-Sixth Sts., Cottage & Gum Sts.	Gift/Purchase	1973	3.39 (5)
John H. Ferns Park	W. Southwood Dr.	Purchase	1973	10.00 (10)
Freeman Park	Fifth & Main Sts.	School District	1920	2.25 (6)
Harris Park	Imperial St. & Ashley Ave.	Purchase	1965	6.11 (7)
Southland Park	College St.	Gift/Purchase	1948 & 1950	2.67 (8)
Tredway Park	Sixth St.	Gift/Purchase	1963	1.57 (9)
Woodside Park	Cottonwood St. & W. El Dorado Dr.	Purchase	1973	10.00 (11)
Greenbelt Park	Mariposa St. & Schuler Ranch Dr	Purchase	1980	8.0 (21)
Prairie School/Park	Matmor Road & Stetson St.	Purchase	1987	3.00 (23)
Woodland Regional Park	CR 102 & CR 25	Landfill Site	1983	160.00 (27)
TOTAL ACREAGE				232.33

CHART 23-2 CONTINUED:

Name	Location	Acquisition	Date	Acreage	
Camarena Field	Beamer St.	School District	1949	4.13	(13)
Clark Field	Beamer St. & Grand Ave.	Gift	1936	3.56	(14)
Dubach Field	I-5 & SR 113	Gift/Purchase	1973	15.00	(16)
Woodland Community Swim Center	N. West St.	Trade - School District	1973	2.40	(19)
Woodland Municipal Swim Pool	Elm St.	Gift/Purchase	1948	1.00	(18)
Yolo Co. Fairgrounds Little League Field	E. Gum Ave. & Barbara Way	Leased	1961	1.42	(15)
W. El Dorado Holding Park/Pond	W. El Dorado Dr. & CR 98	Holding Pond	1979	11.00	(17)
Senior Center	Second St. & Lincoln Ave.	Purchase	1982	1.00	(22)
Storz Soccer Field	CR 101	Holding Pond	1987	16.00	(20)
Camp Packer Creek	Sierra County	Leased	1976	4.50	
Recreation Field	Bartlett St. & Elm St.	Leased	1949	2.60	(28)
Yolano Recreation Area	Yolano Dr. & Lemen Ave.	Leased	1984	5.00	(29)
TOTAL ACREAGE				67.61	
TOTAL PARK AND RECREATION ACREAGE				299.94	

WOODLAND RECREATION FACILITIES

	LOCATION / FACILITIES	Play Apparatus	Picnic Area	Play Field	Softball Diamond (Lighted)	Baseball Diamond (Lighted)	Handball Courts (Lighted)	Tennis Courts (Lighted)	Lighted Volleyball & Basketball Court	Senior Citizens Area	Horseshoe Pits	Amphitheatre Area	Nature Area	Learning Pool	Recreation Pool	Training Pool	Olympic Pool
1	Beamer Park	x	x	x				2									
2	Campbell Park	x	x	x													
3	Christiansen Park	x	x	x													
4	City Park	x	x	x				4									
5	Everman Park	x	x	x					1	x	x						
6	Freeman Park	x	x	x													
7	Harris Park	x	x		1												
8	Southland Park	x	x	x													
9	Tredway Park	x		x													
10	Ferns Park	x	x	x			2	2			x	x	x				
11	Woodside Park	x	x	x				2	1		x						
12	Crawford Park	x	x	x				6	2								
13	Camarena Field		x			1*											
14	Clark Field					1											
15	Yolo County Fairgrounds					1*											
16	Dubach Park				3												
17	W. El Dorado Holding Pond																
18	Municipal Pool													1	1		
19	Community Pool															1	1

WOODLAND RECREATION FACILITIES

No.	LOCATION	Play Apparatus	Picnic Area	Par Course (Exercise)	Play Field	Softball Diamond (Lighted)	Baseball Diamond (Lighted)	Handball Courts (Lighted)	Tennis Courts (Lighted)	Lighted Volleyball & Basketball Court	Senior Citizens Area	Radio Control Aircraft	Horseshoe Pits	Soccer Field	Amphitheatre Area	Horse Arena	Nature Area	BMX	Learning Pool	Recreation Pool	Training Pool	Olympic Pool
20	Storz Soccer Field													x								
21	Greenbelt Park	x	x	x	x																	
22	Senior Center		x																			
23	Prairie School/Park Site	x	x	x	x																	
27	Woodland Regional Park		x	x	x							x		x		x		x				
28	Recreation Field				x	x																
29	Yolano Recreation Area																					

WOODLAND SCHOOL FACILITIES

Football Stadium Noted by fs.
Lighted Stadium Noted by ls.
Lighted Facilities Noted by lf.

	LOCATION / FACILITIES	Play Field	Play Apparatus	Ball Diamond Small	Ball Diamond Medium	Ball Diamond Large	Volleyball Courts	Basketball Courts	Tennis Courts	Football Field	Track (Lighted)	Gymnasium	Gymnasium Multipurpose Room	Multipurpose Room	Little Theatre	Amphitheatre	Special Use Area
	PUBLIC SCHOOLS																
A	Beamer Elementary	x	x	2				x					x				
B	Dingle Elementary	x	x	2	2			x									
C	Freeman Elementary	x	x	4				x						x			
D	Gibson Elementary	x	x	3	1		x	x						x			
E	Lee Junior High School	x		3	1		x	x		x	x		x				
F	Maxwell Elementary	x	x	2			x	x								x	
G	Whitehead Elementary	x	x		3		x	x								x	
H	Zamora Elementary	x	x		3		x	x						x			
I	Douglass Junior High School	x		4/1f	1/1f	1/1f	x	x	x	FS	x	2	x				
J	Woodland Senior High School	x			3	1	x	x	x	1S	x	2		x	x	x	
K	Woodland Center of Yuba College																
	PAROCHIAL SCHOOLS																
L	Holy Rosary	x	x	2			x	x						x			
M	Woodland Christian	x	x	1			x	x						x			
N	Liberty Christian Academy		x					x						x			
	YOLO COUNTY SCHOOL																
O	Green Gate	x	x											x			

23.B.2 SCHOOL FACILITIES

The Woodland Joint Unified School District (WJUSD), the Yolo County School District and the parochial schools have facilities for recreational purposes. There is a joint use agreement between the City and WJUSD which makes many facilities available for dual use. Use of indoor and outdoor facilities at the schools are usually free or available at a minimal fee. Chart 23-3 lists the indoor and outdoor facilities located at each school.

23.B.3 PRIVATE AND COMMERCIAL RECREATIONAL FACILITIES

Privately-owned recreational facilities also serve the recreational needs of the community. These operations are generally open to the public for a fee.

23.B.4 RECREATIONAL ORGANIZATIONS AND CLUBS

An important part of any community's recreational activities are those organizations and clubs which sponsor recreation-oriented activities. These groups are for those individuals interested in specific forms of recreation such as square dancing, rocketry, rugby, horseback riding, etc. Woodland has many organizations providing programs for the youth and the senior citizen. These organizations usually have enrollment to the public for a nominal fee. The list of organizations and clubs sponsoring recreational activities is shown in the Appendix. In addition to these organizations many of the churches in Woodland have recreational programs. Other governmental agencies besides the City's Parks and Recreation Department offer various recreational activities. These include the Adult Education Program, the County Agricultural Extension Service and the City and County Libraries. Other public and private facilities in the area are listed in the Appendix.

23.C MEANS TO OBTAIN AND MAINTAIN PARK LANDS

The current Parks and Recreation budget is supported mainly by the City's General Fund. Although adequate to provide salaries, temporary help, supplies and maintenance equipment and some capital improvements, it is never sufficient to finance any major expansion program requiring land purchases, construction of new facilities and the upgrading of existing recreation areas concurrently. It is, therefore, incumbent upon the City to seek other sources of revenue in order to finance any new facilities.

There are other means available to the City to obtain the necessary funds:

1. <u>The Accumulation of Tax Funds and Capital Funds in Specific Tax Rates</u>

There are many statutory provisions which allow for the establishment of override taxes. These funds could be set aside in a reserve account until sufficient funds were accumulated to finance a particular project.

2. <u>General Obligation Bonds</u>

   a. Requires two-thirds approval of votes cast.

   b. Bond indebtedness cannot exceed 10 percent of assessed value of property in City Limits.

   c. Must be repaid in 40 years.

   d. May levy a special tax to pay off bonds.

3. <u>California Redevelopment Law</u>

   This law is available to finance tax increment bonds in conjunction with a commercial project.

4. <u>Grants and Loans</u>

   Various Federal and State Agencies provide matching grants and loans for recreation, park and open space acquisition and development. There are no grants available for maintenance of such facilities. Except as noted, the City of Woodland has not received grants from any of these agencies:

   a. Department of Housing and Urban Development:

      Urban beautification and improvement
      Historic Preservation Grants
      Open Space Land Program

   b. Bureau of Outdoor Recreation (Land and Water Conservation Fund Act)

   c. EDA

   d. 1974 and 1976, State Park Bond Acts. Monies from these bonds were received by the City. It has been used for the development of Ferns Park, Crawford Park and Dubach Park.

   e. 1986 State Park Bond Act. Money from this bond will be used for the development of a water system at the Woodland Regional Park.

   f. State-Off-Road Vehicle Fund.

5. Loans

Loans are another source of financing recreational facilities. Several park districts have borrowed money from local banks at less than the maximum interest rate. These loans are usually repaid in a shorter period of time, i.e., not to exceed 10 years. Election costs required for bond elections are saved by this method and the money has been used for maintenance, capital improvements and renovation.

6. Purchase of Property

Public jurisdictions have power to purchase, sell, lease, rent and exchange property, to take options and to lease/purchase. The City has purchased and leased several acres of park land. The swimming pool facility was built through lease/purchase. This technique allowed a group of individuals to form a non-profit corporation which in turn sold bonds to finance the development. The city then leases the pool from the corporation for a period of 20 years. After such time, the City owns the swimming facility. These techniques for obtaining land could be used to the benefit of the community at large.

Another technique used by governmental agencies is the power of condemnation of lands including easements for parks and recreational purposes. The public jurisdiction condemns the land and the courts decide the amount of compensation to be paid to the owner of the property by the governmental agency. The City exercised this technique in obtaining land for suitable access to Dubach Park.

7. Subdivision Dedication

Under a Land Subdivision Ordinance, developers could be required to dedicate a certain percentage of land or pay in lieu fees as a condition of the approval of their final subdivision map.

8. Gifts

A universally recognized method for assisting in the funding or construction of recreational or park facilities is through fund raising events or gifts of money, land, material and labor. In particular, voluntary fund raising campaigns have proven successful in California for the purpose of financing the construction of community swimming pools. The landscaping of the Woodland Swim Center was achieved through the donation of materials and labor by the citizens of Woodland. Several parks in Woodand have been obtained through the donation of land.

9. Joint Use/Joint Powers Agreements

The joint exercise of powers has been utilized to ensure that public school districts in California who own or are in the process of acquiring and developing a variety of educational

facilities will do so with community-wide activities in mind. Children's playgrounds, multi-use courts, athletic fields and stadiums, gymnasiums and swimming pools built for physical education can accommodate community activities. Social and cultural recreation programs can be conducted in school auditoriums, cafeterias, workshops, multipurpose rooms as well as in art, music and dance classrooms. Many communities cannot afford to build or lack sufficient space to construct the necessary recreational facilities and this technique offers an opportunity to make maximum use of available facilities at a minimal cost. There is a joint use agreement between the City and School District for use of the parks, schools and recreational facilities.

There are numerous other ways for the City to enter into cooperative arrangements with other jurisdictions. Among them are regional park districts, county service areas and recreation and park districts.

10. <u>Park Fund through Building Fees</u>

Based upon the value of a building project, a fee is paid by the developer to the Building Department for the purpose of purchasing land for parks and the development of these parks within the City of Woodland. This money is segregated from all other funds for exclusive use in acquisition and development of parks and may not be used for maintenance of parks.

This method of funding has both advantages and disadvantages. The fee is linked directly to building activity within the community, such that, as the rate of building increases, so do the receipts from the tax. These fees help offset the new demands imposed upon the existing facilities by the increased population as reflected in the construction of homes, offices, commercial and industrial structures. Receipts are, therefore, geared directly to demand. Once construction levels decline so does the amount of money available for parks. If the available facilities are deficient to begin with, there will continue to be inadequate park facilities.

23.D AVAILABLE PARK LANDS

1. City Facilities

CHART 23-4

Name	Location	Acquisition	Date	Acreage
Storz Soccer Field	CR 101	Purchase	1987	16.0
Woodland Regional Park	CR 102 & CR 25	City Transfer	1983	160.0
Undeveloped Land at Greenbelt	Ashley Ave. & CR 98	Purchase	1980	

The Woodland Regional Park (landfill site) located on County Road 102 southeast of Woodland. This land is planned to be developed over a 10-year period providing areas for biking (BMX), archery, horse area, model planes and rocketry. The site includes a 17-acre lake filled with secondary treatment water.

Combining these proposed sites for parks and recreational facilities with the existing ones gives the City a toal of 299.94 acres of park land for a ratio of .86 acres per 1000 population.

2. Growth Requirements

The Parks and Recreation Element established the standard of one 10-acre neighborhood park per three-eighths mile radius service area serving up to 3,000 population. The plan provides for future park sites in Area A north of Kentucky Avenue and west of West Street (North West Kentucky Park Site); Area A north of Kentucky Avenue and east of West Street (North East Kentucky Park Site; Area I east of SR 113 and south of Gibson Road (East Gibson Park Site); and Area J east of CR 101 and north of Gibson Road. The other 20 acres of proposed development in the 20-year plan will be for recreation areas for ball fields. The 20-year plan provides for 60 additional acres at a rate of 10 acres per 2,750 population growth.

The availability of land suitable for parks in the Woodland area is dependent upon three major considerations:

a. The location of the available vacant land within the Woodland area.

b. The type of park or recreational facility which is desired within the Woodland community whether it be in the form of a neighborhood or community park or a community civic center.

c. The availability of funds for acquisition, development and maintenance.

R E C R E A T I O N   A P P E N D I X

CITY RECREATION PROGRAMS

The City Parks and Recreation Department offers recreational programs on a seasonal basis. The types of programs available, the age groups served and the time of year offered is listed below:

1. Spring: January through May

   a. <u>Ages 0 through 6</u>

      Swim Team
      Gymnastics
      Soccer
      Marshal Arts
      Drama

   b. <u>Ages 7 through 9</u>

      Swim Team
      Soccer
      Softball
      Gymnastics
      Marshal Arts
      Drama
      Wrestling
      Tennis
      Basketball
      After School Programs
      Special Events

   c. <u>Ages 10 through 14</u>

      Swim Team
      Gymnastics
      Drama
      Special Events
      Soccer
      Basketball
      After School Programs
      Marshal Arts
      Tennis
      Wrestling
      Open Gym

   d. <u>Ages 15 through 18</u>

      Basketball
      Volleyball
      Swim Team
      Gymnastics
      Special Events
      Fitness and Cultural Programs
      Drama
      Wrestling
      Open Gym
      Marshal Arts
      Tennis

   e. <u>Ages 19 through 55</u>

      Basketball
      Volleyball
      Swim Team
      Adult Lap
      Master Swim Team
      Water Exercise
      Drama
      Special Events
      Fitness and Cultural Programs
      Marshal Arts
      Tennis
      Softball
      Open Gym

f. Ages 56 and over

Adult Lap
Water Exercise
Master Swim Team
Fitness and Cultural Programs

2. Summer: June through August

a. Ages 0 through 6

Swim Lessons
Recreational Swim
Swim Team
Day Camp
Marshal Arts
Drama
Gymnastics
Park Program
Special Events

b. Ages 7 through 9

Swim Team
Recreational Swim
Swim Team
Gymnastics
Drama
Park Program
Marshal Arts
Special Events
Tennis

c. Ages 10 through 14

Swim Lessons
Recreational Swim
Swim Team
Program X
Teen Activities
Park Program
Tennis
Special Events
Wrestling

d. Ages 15 through 18

Softball League
Tournament Program
Swim Lessons
Recreational Swim
Swim Team
Program X
Teen Activities
Wrestling

e. Ages 19 through 55

Softball League
Tournament Program
Senior Softball League (50 and over)
Adult Lap
Swim Lessons
Recreational Swim
Master Swim Team
Water Exercise

f. Ages 56 and over

Senior Softball League
Softball League
Tournament Program
Adult Lap
Swim Lessons
Recreational Swim
Master Swim Team
Water Exercise
Program X

3. Fall: September through December

a. Ages 0 through 6

- Swim Lessons
- Recreational Swim
- Swim Team
- Day Camp
- Marshal Arts
- Drama
- Gymnastics
- Park Program
- Special Events

b. Ages 7 through 9

- Swim Team
- After School Program
- Flag Football
- Soccer
- Basketball
- Volleyball
- Special Events
- Gymnastics

c. Ages 10 through 14

- Swim Team
- Gymnastics
- Special Events
- Marshal Arts
- Tennis

d. Ages 15 through 18

- Basketball
- Softball
- Volleyball
- Swim Team
- Sports
- Arts and Crafts
- Special Events

e. Ages 19 through 55

- Volleyball
- Basketball
- Softball
- Master Swim Team
- Adult Lap
- Water Exercise

f. Ages 56 and over

- Master Swim Team
- Adult Lap
- Water Exercise

WOODLAND RECREATION ORGANIZATIONS AND CLUBS

1. Yolo County 4-H Council
2. Woodland Softball Association
3. Boy Scouts of America
4. Girl Scout and Brownies Organization
5. Campfire Girls and Bluebirds
6. Little League
7. 49'er Football Club
8. Woodland Babe Ruth
9. Woodland Powder Puff
10. Woodland Brass
11. Yolo Senior Babe Ruth
12. Winter League Baseball
13. DeMolay - District 82
14. Job's Daughters - Bethel 260
15. Order of Rainbow Girls Assembly
16. Rugby Association
17. Soccer Club
18. Beaux and Belles
19. Mr. & Mrs. Dance Club
20. Spartans Motorcycle Club
21. Yolo Sportsmen's Association
22. Model Rocket Club
23. Woodland Radio Control Club
24. Assoc. of Charros Los Caporales
25. Shakespeare Club
26. Western Yolo Horsemen Assoc.
27. Woodland Camera Forum
28. Woodland Tennis Club
29. Yolo County Horsemen's Assoc.
30. Woodland Swim Team
31. American Assoc. of Retired People (AARP)
32. Cottage Club-Senior Citizens
33. Woodland Chess Club
34. Regional Corporales
35. Knights Landing Sportsmen's Club
36. Future Farmers of America
37. Elkhorn Boat Club
38. Knights Landing Boat Club
39. Town and Country Club

Other Private and Public Recreation Facilities

1. Nelson Grove YMCA Camp
2. Camp Packer Creek
3. Camp Haswell Boy Scout Cabin
4. The Woodland Boy Scout Cabin
5. The Woodland Girl Scout Cabin
6. Community Cottage
7. Imperial Savings Meeting Room
8. Yolo County Airport

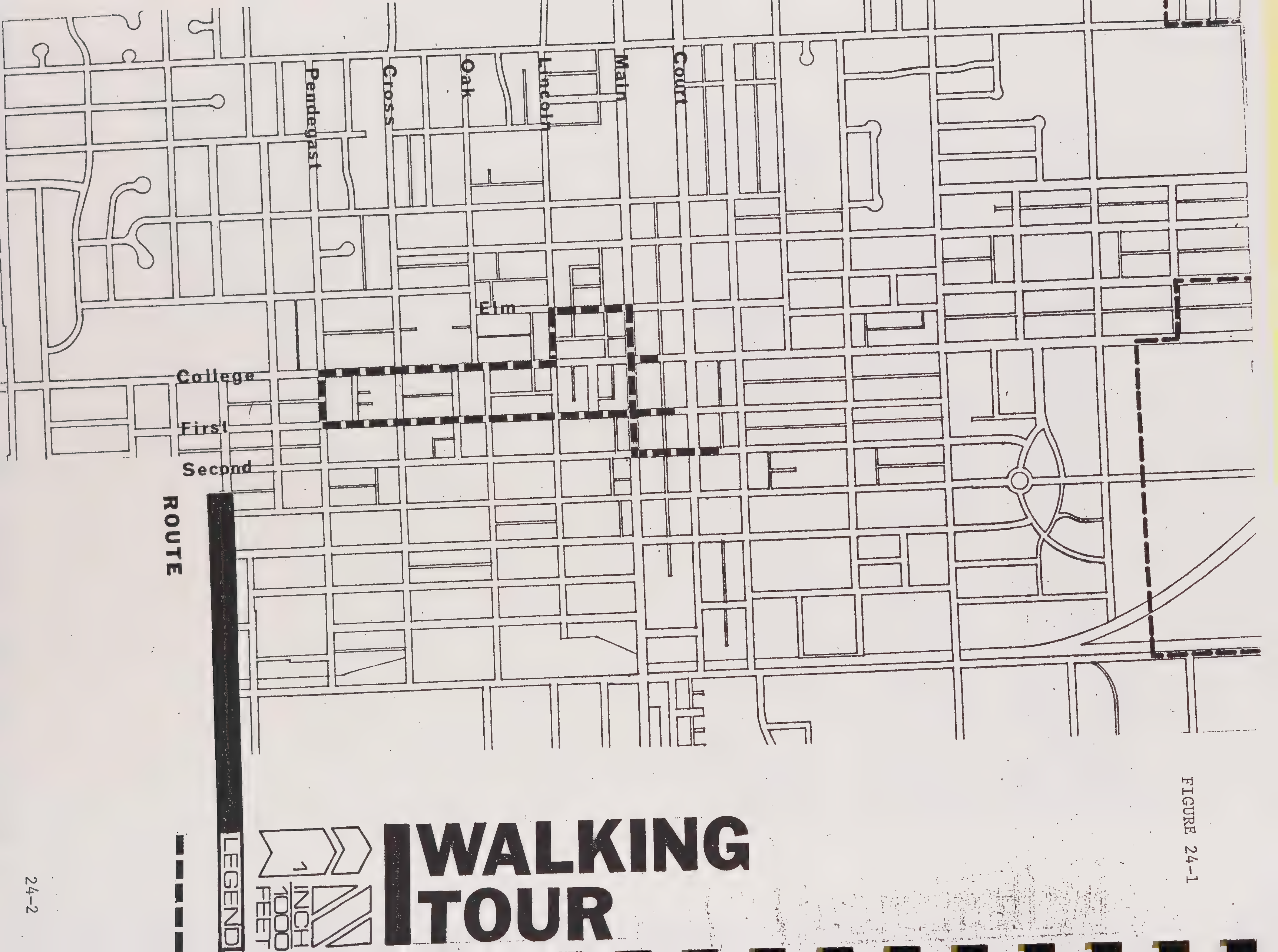
Scenic Resources

24. SCENIC CORRIDORS

An official state or county scenic highway is one which has been officicially designated by the Scenic Highways Advisory Committee after application from a local jurisdiction and only if it is included on the list of eligible highways in Section 263 of the State Streets and Highways Code.

There are no official or unofficial scenic highways in the City of Woodland. Yolo County has not officially designated any scenic highways although three highways in this area have been identified in the County's Scenic Highways Element. They are State Highway 128 from Winters to Lake Berryessa, State Highway 16 from Capay to the Colusa County line, and the river road from Knights Landing to Sutter Slough.

Within Woodland, tree-lined streets provide a number of scenic corridors. In particular, the area within the Walking Tour of Historic Woodland as shown as Figure 24-1 is recognized as a local scenic corridor. It will be the City's policy to encourage the protection and enhancement of this area as a local scenic corridor. (The Historic Preservation Section addresses this area in greater detail.)



Pendegast
Cross
Oak
Lincoln
Main
Court
Elm
College
First
Second
ROUTE
LEGEND
1 INCH 1000 FEET
WALKING TOUR

FIGURE 24-1

Economic Factors

25. ECONOMIC FACTORS

With significant increases in several industry divisions, employment in Yolo County rose by nearly four percent in 1986 for a net gain of 2,100 jobs. Growth in 1986 exceeded the corresponding figure for 1985 by 500 jobs, but fell 1,500 short of the total number of new jobs in 1984.

Industry trends in 1986 were somewhat different from those the year before. Although there were substantial job gains in retail trade, services, and government industry divisions during 1985, significant losses were reported in manufacturing, in transportation and public utilities, in finance and in agriculture. In 1986, employment growth was more uniform, with fewer industries reporting job losses.

Job growth during each of the two forecast years, 1987 and 1988, is expected to be somewhat lower than it was in 1986, with the greatest number of new jobs to be found in wholesale and retail trade, the service industries, and government. Construction, manufacturing, and finance-insurance-real estate are expected to contribute a significant, although smaller, number of new jobs during this two-year period.

Agriculture

Farm employment in Yolo County has shown a trend of decrease over recent years as operators look for ways of cutting costs. More efficient use of equipment and changes in farming practices have resulted in a somewhat lower demand for seasonal labor over the last few years.

The outlook for any substantial gains in farm employment over the two-year forecast period is not favorable in view of the continuing cost-price squeeze in most agricultural operations. Principal crops in Yolo County include tomatoes, sugar beets, tree fruits and nuts, rice and asparagus.

Mining

Employment in this industry division decreased slightly in 1986 because of lower activity in oil and gas field service operations. No further job gains are expected in this sector until 1988.

Construction

Gains over the last three years have brought employment levels in this industry division back to the 1979 pre-recession peak of 2,000 jobs. More favorable interest rates and confidence in the continuing economic growth of the area have stimulated commercial and industrial development as well as a strong demand for residential housing.

The outlook over the next two years is for moderate growth in employment, based on further gains in the construction of housing, retail space, and space for wholesale distribution activities.

Manufacturing

There was a moderate increase in the number of manufacturing jobs in Yolo County during 1987. Gains occurred primarily in food processing and the production of materials for the construction industry.

More than 40 percent of Yolo County's manufacturing employment is in food processing: in canning fruits and vegetables, in rice milling, in beet sugar production, in the bottling and canning of soft drinks, and others. Total employement in Yolo County for the food processing industry, after the recovery of losses sustained during the recessionary years 1982 and 1983, now stands at the same level as in 1979. Activity in several other manufacturing industries depends, to a large extent, on demand from agriculture and food processing; job growth in these industries has been slow over recent years.

In manufacturing, job gains over the two-year forecast period are expected only in the durable goods categories, with small increases in transportation equipment and machinery.

Transportation and Public Utilities

Employment in this industry division increased moderately in 1986, with all of the growth occurring in trucking and warehousing. There has been no growth of employment in the communications industry for several years, although minor gains have been reported in electric services due to additional work in extending service to areas of new construction.

Job growth in this industry division over the two-year forecast period is expected to be very small and confined to further gains in transportation and warehousing.

Wholesale Trade

Job growth in wholesale trade declined slightly in 1986 with gains reported only in the distribution of consumer goods and farm product raw materials.

Gains during the two year forecast period are expected to be more widely distributed, with small increases in some durable goods categories such as lumber and building materials as well as in a variety of nondurable goods categories.

Retail Trade

New retail trade jobs in 1986 occurred primarily in eating and drinking places, in general merchandise stores, and in building materials and garden supply stores. Although employment in several other retail trade categories has shown substantial gains over the last few years, eating and drinking places continue to provide the majority of all new jobs in this industry division.

The 1987-88 outlook is for 1,200 new retail trade jobs in Yolo County over the next two years. The largest gains are expected in eating and drinking places, food stores, general merchandise stores, and in specialty retail trade activities.

Finance, Insurance, and Real Estate

Job growth was recorded in all three components of this industry division in 1986. Gains in finance were mainly the recovery of losses sustained the year before, with some small additional gains in savings and loan associations and mortgage companies. Higher employment in real estate was due to greater activity in both new residential sales and resale activities. There was also some expansion of local insurance operations.

Although further job growth during the forecast period is expected in each of this division's major components, gains are expected to be substantially lower than those recorded in 1986.

Services

Job growth in the service industries slowed somewhat in 1986 with significant gains reported in only two service categories: business services and social services and membership organizations. Gains in business services occurred in a variety of activities including equipment rental and leasing, research and development laboratories, and management and public relations. Those in social services and membership organizations were primarily in religious organizations and labor organizations.

The outlook for 1987 and 1988 in this industry sector is for an additional 600 jobs, over the two-year period, primarily among the business services and health services.

Government

There was a substantial increase in government employment in Yolo County during 1986 due to additional jobs in both state and local education. This trend is expected to continue into the 1986-87 forecast period, although gains are expected to be substantially smaller than they were in 1985 and 1986.

25.A LABOR FORCE TRENDS AND OUTLOOK

Yolo County's civilian labor force reached an average level of 65,300 in 1986, an increase of 2,800 over the preceding year. Employment rose during this period by 3,300, to a level of 60,000, while unemployment dropped by 500 to a level of 5,300. These developments brought a reduction in the county's unemployment rate from 9.2 percent in 1985 to 8.1 percent in 1986.

Yolo County's employment and labor force are expected to grow at a moderate rate during the two-year forecast period, 1987-88. Although unemployment is expected to increase slightly in 1987 and 1988, the stronger trend of employment growth will bring further reductions of the unemployment rate in 1987 and 1988.

TABLE 25-1

Civilian Labor Force, Employment and Unemployment
1985-1986 Annual Averages
1987-1988 Forecast

Yolo County

Items	Historical		Forecasts	
	1985	1986	1987	1988
Civilian Labor Force 1/	62,500	65,300	67,800	70,500
Employment	56,700	60,000	62,400	64,900
Unemployment	5,800	5,300	5,400	5,600
Unemployment Rate 2/	9.2	8.1	8.0	7.9

March 1986 Benchmark.

1/ Labor force by place of residence. Employment includes persons involved in labor-management trade disputes.

2/ The unemployment rate is computed from unrounded data; therefore, it may differ from rates developed by using the rounded data in this table.

25.0 ECONOMIC FACTORS

SOURCES

1. Woodland General Plan, Housing Element
2. 2002 Conference 6/11/86
3. Action Plan - Summary of Master Environmental Assessment - 1978

Cultural Resources

26. CULTURAL RESOURCES

26.A HISTORICAL PRESERVATION

Authority to include a Historic Preservation Element in the General Plan is found in the California Government Code, Section 65303 which states:

> "A Historical Preservation Element for the identification, establishment and protection of sites and structures of architectural, historical, archaeological or cultural significance, including significant trees, hedgerows and other plant materials. The Historical Preservation Element shall include a program which develops actions to be taken in accomplishing the policies set forth in this element."

Woodland has many significant historic buildings, districts, events and artifacts which relate to the development of the community. The goals, objectives, policies and implementation measures within this element provide for their conservation.

Public awareness of historic preservation has increased remarkably in recent years. The Woodland community has shown a concern for preserving its heritage of architecturally and historically significant buildings believing these buildings are an essential part of City life. Recognition that several old landmarks have already been demolished has stimulated local interest in a preservation program to restore the City's older and select districts.

It is necessary to present a framework for the development of specific criteria for structures, sites and areas of architectural, historical and cultural significance. Basic criteria provide methods of evaluating significant structures within urban areas. The following guidelines may be considered in developing criteria for determining the significance of structures and areas.

Architectural Significance:

1. Structures or areas that embody distinguishing characteristics of an architectural style, period, method of construction or architectural development in a City.

2. Notable works of a master builder, designer or architect whose style influences the City's architectural development or structures showing the evolution of an architect's style.

3. Rare structures displaying a building type, design or indigenous building form.

4. Structures which embody special architectural and design features.

5. Outstanding examples of structures displaying original architectural integrity, structures and/or style.

6. Unique structures or places that act as focal or pivotal points important as a key to the character or visual quality of an area.

Woodland has a wide range of structures built between 1860 and 1940 that exhibit architectural styles ranging from a Classical Revival farm house through the Victorian Gothic era and the Queen Anne style to the Moderne and International styles.

Historic Significance:

1. Sites and structures connected with events significant in the economic, cultural, political or social history of a community, state or nation.

2. Structures or areas identified with the lives of historic personages of a community, state or nation.

3. Sites and groups of structures representing historic development patterns (urbanization patterns, railroads, agricultural settlements, canals, etc.).

Locally, Dead Cat Alley is an area of historical significance because of its relationship to the Chinese people and the development of the downtown area.

Cultural Significance:

4. Places which provide information concerning social and cultural trends that may reflect a people's beliefs, skills and institutions of a given time. Examples are the Opera House, schools, museums and religious structures.

Additional evaluation factors of importance are the capacity of the structure for public use and enjoyment, its adaptability to other uses and planning considerations (i.e., current zoning, adequacy of property boundaries and parking, conformance with land use in the General Plan and endangered status).

Preservation

Preservation of Woodland's significant buildings and areas has largely relied on individual interest. The Yolo County Historical Society is one organization which strives to save historic structures and to educate local residents about the history of the City and the County. A nonprofit, private organization with several hundred members, the Society exists to research, interpret and disseminate information about Yolo County's history.

Through a system of functioning committees, historic sites are identified; displays are arranged and prepared; and programs, tours and publications are scheduled and published. Various fund-raising activities are organized to support the cost of the Society's

operations. The Yolo County Historical Society has been instrumental in the restoration and preservation of the Woodland Opera House, Springlake School and the Gibson House Museum.

The YMCA has actively participated in the preservation of Nelson's Grove, a 13.5 acre grove of native oak trees once used for recreation and social gatherings by area residents. The grove is located northeast of County Road 99E and County Road 18B.

There are many ways in which the City and County can promote preservation. In 1971, the City adopted an ordinance providing for the creation of a Historical Landmarks Advisory Committee and Historic District Zoning. This ordinance was promulgated through the efforts of the County Historical Society, the Yolo County Historical Landmarks Advisory Committee and the City Planning Commission. This ordinance was replaced in 1981 by the current ordinance which reconstituted the Historical Landmarks Advisory Committee as the Historical Preservation Commission but eliminated all references to residential properties.

The Historical Preservation Commission is composed of seven members appointed by the City Council. The Commission considers applications for non-residential Historical Districts and Historical Landmarks. They also review building permits authorizing demolition or exterior alterations, additions or modifications to designated historic buildings.

There are currently three City Historic Districts, three City Historic Landmarks, three State Historical Monuments and seven National Register structures in Woodland. The Commission has instituted a program of awarding Certificates of Recognition to individuals who do an outstanding job of restoration. Seven certificates have been awarded to date. Figure 26-1 and Table 26-1 provide a list and location of these historic buildings.

In 1981 the City obtained a Federal grant through the California Office of Historic Preservation to prepare a historical resource inventory of structures in Woodland built prior to 1940. The inventory was completed in 1982 and 1,000 sites were surveyed and photographed. A detailed survey form was prepared for 364 sites. A complete set of forms is on file in the Community Development Department.

Easements can be another tool used to further historical preservation purposes. An easement does not affect the ownership of property but only certain rights that go along with it. For example, there are facade or architectural easements by which the exterior of a structure may be controlled by the holders of the easement.

Several tax relief benefits are available for preservation activities. Charitable contributions to preservation programs are tax deductible as is the value of a dedicated historic or facade easement. The California Revenue and Taxation Code, Sections 50280 - 50289 provides for a reduction in local tax assessments for designated State and

national landmarks. To qualify for the reduced assessment, the owners of landmarks must agree to maintain the site. In some areas, non-profit groups have purchased and restored historical structures and then, prior to their sale, placed deed restrictions on the property which prevent demolition or significant alterations of the structure.

TABLE 26-1

CURRENT NATIONAL REGISTER ENTRANTS

Gibson Mansion 512 Gibson Road	11/7/76
I.O.O.F. Building 723 Main Street	2/25/82
Porter Building 511 Main Street	11/30/78
Woodland Opera House 320 Second Street	11/5/71
Woodland Public Library 250 First Street	9/28/81
Yolo County Courthouse 725 Court Street	2/26/87
R.H. Beamer House 19 Third Street	7/29/82

CURRENT STATE POINT OF HISTORICAL INTEREST

Christian Science Church
450 First Street

CURRENT STATE HISTORICAL LANDMARKS

Gable Mansion
659 First Street

Woodland Opera House
320 Second Street

CURRENT CITY HISTORIC DISTRICTS

Gibson Mansion Historic Museum Property
512 Gibson Road

Woodland Opera House Property
320 Second Street

Yolo County Courthouse Block
725 Court Street

CURRENT CITY HISTORIC LANDMARKS

Coleman House
611 North Street

Jackson Building
426 First Street

Traughber House
163 Second Street

CERTIFICATES OF RECOGNITION

Award to property owners who have done an outstanding job of historic restoration.

Alge House
429 First Street

Gilberts Gables
638 First Street

Jackson Building
426 First LStreet

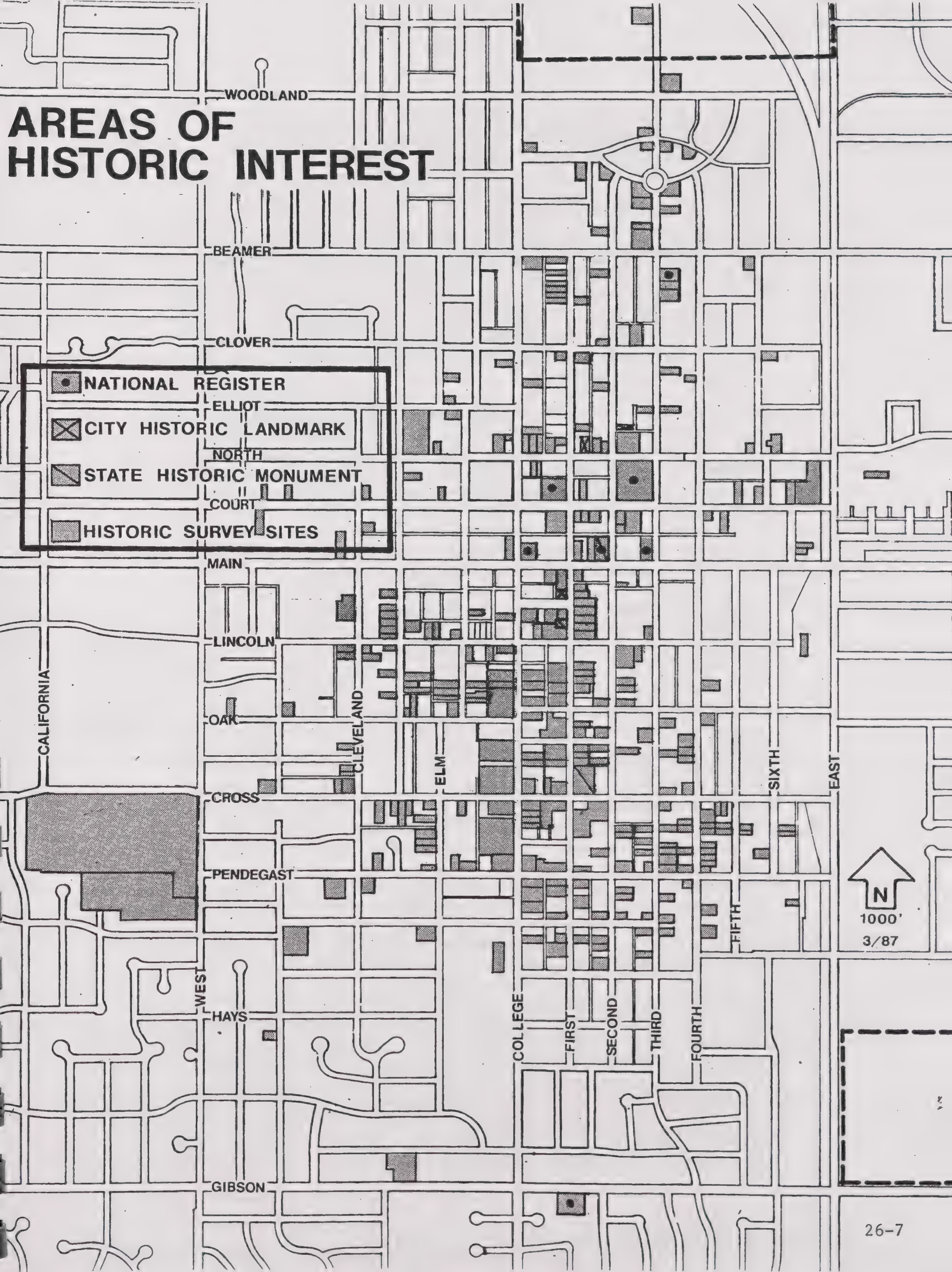
Moore Building
315 Second Street

Stallard Building
712-714 Main Street

Northern Electric Railway Station
626 Main Street

Bailey Building
303 First Street

AREAS OF HISTORIC INTEREST



Incentives can be developed to allow mixed uses of the interior of buildings restored to their former condition. A Historical Preservation Commission, working in cooperation with many of Woodland's private businesses, could explore new uses which can be made of the older commercial buildings in the downtown area.

Although often thought of as the nemesis of historical preservation, small development projects have provided the financial and legal framework for a number of historical preservation projects throughout the United States. In California, redevelopment projects in Sacramento and Napa have utilized the redevelopment process as a method of furthering historical preservation. Federal funding limitations, however, make this alternative less viable than those previously mentioned.

Building codes often presented physical and economical obstacles to the restoration and preservation of historical structures until the State Historical Building Code was adopted in 1979. These alternative regulations are now mandatory for qualified historic structures and they recognize the unique construction problems inherent in historic buildings.

An increasing number of private and public groups are providing a wide variety of incentives to historical preservation.

The National Trust for Historic Preservation was chartered by Congress in 1949 to further the national policy of preserving for public use America's heritage of historic districts, sites, buildings, structures and objects to facilitate public participation in the historic preservation movement and to serve that movement through educational and advisory programs and to accept and administer for public benefit and use significant historic properties. The Historic Preservation Act of 1966 provides funds on a matching basis to public agencies for restoration and preservation.

The National Endowment for the Arts has funded a number of restoration projects of unique architectural structures, private foundations such as the Rockefeller Foundation and the America the Beautiful Funds also provide financial assistance to interested communities. The primary prerequisite for receiving such assistance is an adopted plan for historical preservation and the establishment of an Historic Advisory Commission with authority in this area. In short, if the community is seriously pursuing the goal of preservation, it is more likely to receive outside assistance.

Local assistance is perhaps the most effective means of furthering an historical preservation program. Although funds may be limited, the City of Woodland, through a number of innovative programs, can provide a source of financial assistance. One of the most feasible methods would be participation in a revolving fund to purchase and restore historical structures. Once restored, these structures could be sold with appropriate deed restrictions and the funds used in other restoration projects. Other possible methods include fix-up loans, tool loans and similar self-help assistance. It is significant to

note that, in the proposed Federal Housing Community Development Act of 1974 Grant Program, funds may be used for historic preservation programs.

Perhaps most important, throughout Woodland numerous small projects are undertaken each year by owners of older houses to maintain their beauty and utility. In the end, it is this private effort which can be the most meaningful because it is uncomplicated and direct. The City's Historical Preservation Commission could assist in this process by encouraging lending institutions and other groups to provide loans and other forms of assistance to these individual efforts.

26.A.1 THE OPERA HOUSE

The Opera House, opened originally in 1895, is a large brick structure representing turn of the 19th Century institutional architecture. Closed in 1913, the Opera House stood dormant for 57 years when it was reopened in 1970 to serve as a part-time community center and theatre. From 1980 to 1983 the Opera House went through partial restoration. It has since reopened and operates on a temporary basis providing local community theatre. The final phase of restoration, scheduled to start in July 1988, will enable the theatre to attract varying types of performing groups, from local as well as regular resources. The theatre seats 550 patrons and has an updated heating and cooling system to ensure the comfort of performers and the audience.

Source: Louis Johnson, 12-28-87, Woodland Opera House

26.A.2 YOLO COUNTY HISTORICAL MUSEUM

The museum located on Gibson Road in the city is housed in the former home of the only prominent Gibson family. The rooms of the house exhibit different periods of western American culture from 1850 through 1948. Adjacent to the house is a wash house, dairy room, and root cellar.

The land and house is owned by Yolo County; the museum is operated by members of the non-profit Yolo County Historical Museum.

The museum has exhibits of native California plants, trees, and shrubs and also includes an early California herb garden. Included with the permanent exhibits, the museum has a program of changing exhibits on varying topics. Past exhibits have shown period costumes, antique toys, and local Indian culture. Attendance at the museum averages 3,000 people per year, and has attracted a number of groups and individuals worldwide who wish to authenticate California history.

Source: Monica Stengart -12/28/87 -Yolo County Historical Museum

26.B ETHNOGRAPHIC OVERVIEW

The Woodland study area had initially been held by the Poo-e-win, a dialect group of the Patwin or Southeastern Wintun (Merriam 1966-67, 3:267). Our knowledge of the Poo-e-win is somewhat sparse compared to what is known about other neighboring Indian groups owing to several factors:

1. The proselytization and enslavement of the Poo-e-win by the Spanish missionaries, which had the effect of vastly reducing their numbers through hardship and disease. This practice also may have led to a virtual loss of ethnic memory due to near-complete loss of oral histories.

2. The malarial epidemic of 1830-33 and the smallpox epidemic of 1837 decimated much of the surviving population.

Thus, when the establishment of Woodland took place in the late 1850's, there would have been very few Native Americans occupying their traditional environments. One historical document does mention that the first laborers used by the earliest farmers of Woodland were the native Patwin peoples. This suggests that there may still be Patwin-speaking people resident in or around Woodland who might be able to provide first-hand accounts of White-Indian relations in the early American period.

What information we do have comes from Indian informants living around Colusa, Rumsey, Cortena, Stonyford, and Grindstone (Elk Creek) (Kroeber 1932:254). This data should be understood to reflect the remembered lifeways of a semi-acculturated people whose knowledge and understandings of their pre-contact culture has been diluted and altered through the loss of a major portion of their population as well as the enculturation of the Patwin to the lifestyle of Western European culture.

The Poo-e-win, as most Patwin groups, occupied the major rivercourses and tributary drainages of their territory, such as the Sacramento River, Cache and Putah Creeks and in some instances, at springs. In these areas only places which had an elevation sufficient to keep them above the rising waters of seasonal floods would have been selected for permanent villages (Kroeber 1932:254-255). These permanent villages served as a base of a tribelet consciousness with which all its members identified. Even if the "mother" village were re-located, the people's identification stayed with the tribelet (Kroeber 1932:258-259). An example of this sense of community would be the Poo-e-win tribelet of the Yo'doi which at one time occupied a large village in the town of Knights Landing.

From these permanent villages, the various family groups could utilize (exploit) the varying resources of several environments. These environments are:

1. streams and marsh lands for salmon, sturgeon, perch, water fowl, mussels, and tules as well as other vegetable products which served not only for food but also as construction materials.

2. the riparian zone from which vegetal as well as animal products and raw materials for building could be drawn.

3. the valley woodland and prairie communities offered antelope, deer, elk, rabbit, doves, and quail. From the vegetation standpoint, abundant harvests of wild seed from the family Compositae (sunflower) in addition to Alfilaria, wild oak (an alien dating from 1779) and bunchgrasses. It was also from this valley woodland community that acorns were collected.

Although sufficient fresh water sources are presently lacking in the Valley, the valley woodland and prairie communities, which constitute much of Woodland's MEA area, would have been a particularly attractive area for hunter/gatherers. It is more than likely that this area functioned as seed collecting tracts which would have been the personal property of individual families of the tribelet, as well as the gathering place for Valley oak acorns (Kroeber 1932:276). It also could have functioned as hunting territory for large terrestrial mammals as well as migratory fowl, who would have congregated in the tule swamps or at the edge of vernal pools.

Of an especial importance to the Poo-e-win and their neighbors was a main trading trail between the Clear Lake Park region of the Pomo and the Sacramento River of the Patwin and Nisenan, which followed the course of Cache Creek. Over this route the Patwin traded woodpecker scalp belts, cordage, shell beads, sinew backed bows and yellow hammerhead bands in return for shell and magnesite beads, salt, obsidian, fish, and clamshell. This trade route served an important means of cultural and social interchange in addition to a vital economic supply line for the Patwin and their neighbors to the north, the Nomlaki, to the east the Nisenan, and to the west the Pomo (Davis 1961:34-35).

The Plains provided an abundant source of seed plants and grasses. Principally, these plantstuffs are represented by members of the family Compositae (sunflower), although such foodstuffs include buttercups, alfilaria, bunchgrass, and to a lesser degree, wild oats (Powers 1877; Kroeber 1932:276; Palumbo 1978:355). These plants were harvested either by beating or cutting the seeds from them into a gathering basket. Having prepared a smooth section of ground, the seeds were thrashed and then winnowed in the wind. These could then be either eaten unprepared or parched with hot coals in a basket or ground into a flour from which they could make bread or soup (Powers 1877).

The acorn was gathered in the fall from the valley oaks. Ground in a wooden mortar made of an oak bough, the flour was leached of its bitter tannin in a sand basin. This flour could then be cooked as bread in an earth oven or boiled with hot stones in a basket to make soup (Kroeber 1932:275). Various herbs, seeds or meat could be added to create different types of soups or mush.

All seeds and acorns were stored in granaries seven to eight feet tall and six to seven feet in diameter. These were layered on tule mats and included dried salmon and various other dried meats (Kroeber 1976:275).

The dry lands of the plains were also used for hunting deer and antelope during the winter months (Powers 1877). Here a net about six feet wide and up to 400 feet long was stretched out and deer driven into it to be killed (Kroeber 1932:277-278).

Woodland, although sitting on a slight elevation which afforded dry ground during seasonal flooding, does not have sufficient water resources, in terms of magnitude of streams or rivers, which would have been sufficient to permit permanent villages. It is important, however, to consider a thorough examination for possible natural springs or sinks and relict water courses which might have afforded suitable living conditions for the earliest inhabitants of the Central Valley in this region. (A recent paleontological discovery along the south side of Cache Creek, that of a mastodon skeleton, suggests that megafauna may have been present in this region, and so too, Paleo-Indian big-game hunters. The implications of this find on archaeology in Woodland will have to await address in future documents, when data are more plentiful.)

The Woodland study area was most probably the locus of temporary hunting and seed gathering camps established for the harvesting of acorns among the oak stands and gathering of edible seeds from the plants of the prairie. In addition the area provided a likely source for hunting antelope, deer, rabbit, and quail. However, it is unlikely that any concentrated remains of these activities will be documented in the literature owing to the temporary nature of these encampments and the nature of the prevailing historic land use patterns (leveling and filling for cultivation). Had Native American structures been present (at least during the contact period), they would have been a simple rectangular roof held up by four poles, a summer structure later called a <u>ramada</u> by the Spanish (McKern 1923:171). Tools carried and used at such an encampment would be only those necessary to perform the required task (McKern 1923:171).

Historic land use, predominately cultivation, although grazing of livestock also took place, can be expected to have re-distributed aboriginal cultural materials within the study area unless deeply buried by alluvium. Historic accounts of both Spanish and later white settlers in the study area fail to make special mention of Patwin informants, except to note that they served as farm laborers. Much more important to the early European visitors to this area, as indicated in the diaries and expedition notes, were the permanent

villages situated along the major drainages, which would have supplied (either willingly or through force) supplies and labor for both Missionary and land owner alike. The Yolo County Historical Society had pointed up the need for research to be centered upon the early Spanish diaries, in order to discover details of "the ancient Patwin Indian culture" (1970:i).

Extant Prehistoric Resources in the Study Area

Complete field examination of the Woodland study area was not carried out as a part of this report. Instead, this study involved a search in the literature for details on known or suspected potential prehistoric resources, which might be impacted by any proposed change in land usage. A search of the records of recorded prehistoric sites for Yolo County, housed at the Regional Clearinghouse at the University of California at Davis, showed no recorded sites within the project boundaries. This however does not rule out their existence, either at unknown springs or possibly along the earlier shores of Cache or Putah Creeks. We feel that this lack may be due in great part to the very small sample of area surveyed within the study area. This lack of specific concern in this area on the part of the archaeological community may be due in part to the temporary nature of settlements potentially to be found in Woodland, whose physical remains are often less manifested in the record or extremely subtle.

Temporary encampments are poorly understood even today by the archaeological community. There is more information extant on the criteria for selection of permanent village than on temporary camps, particularly because researchers are often drawn to sites containing sizeable quantities of aesthetically pleasing goods associated with burials of high statused individuals, rather than the often technologically simple, uni-purpose gathering or processing camp.

Potentially Sensitive Areas to Prehistoric Resources

Without field examination, this study cannot empirically state where prehistoric resources should be found, if present. However, there do appear to be certain spots which potentially could contain prehistoric deposits, albeit potentially out of context due to historic land modification, which should be further investigated.

1. All areas where possible pre-Pleistocene and/or Holocene watercourses may be buried by alluvium. These areas can best be discovered through geological investigations, and their locations re-visited by an archaeologist, to check for buried paleosols, megafaunal fossils, or stone implements. If indications of buried drainages are found in the study area, typical archaeological surface reconnaissance may be insufficient to observe them. A program of random monitoring of trenching activities in these potentially sensitive areas could be used to recover such finds and recommend future protective measures.

2. Any area where a grove of native oaks are present, or where stands of native grasses still remain, could be sensitive to prehistoric utilization. Recently proposed State legislation seeks to protect and preserve areas where Native Americans gather raw material such as grasses, seeds, quarry rock and shellfish for food, implements, or ornament. A precedent has been set with the establishment of a grove of native oak trees near the Nelson Ranch as a significant historic resource by the YMCA of Woodland. Examination of similar groves of oaks as well as certain kinds of ethnically significant trees such as the tree of Heaven (to the Chinese) could help increase the data base appreciably.

The present White community in Woodland needs to be canvassed about their knowleldge of prehistoric materials being recovered during plowing and other such activities in the Woodland area. During our brief physical examination of the study area, we failed to find any resident who had ever found prehistoric artifacts. This does not mean that isolated artifacts have not been found, or will not be found, in soils disturbed by agricultural or construction activities. It just means that research did not go deep enough. Particularly important would be an attempt to canvass the resident Native Americans, of which the 1975 census enumerated 39 households and 98 persons, to seek information on their tribal affinity and remembrances of Woodland or their past homelands. It appears that Native Americans constitute an unspoken resource in the search for data on potential cultural resources, or areas sensitive to such resources, in the Woodland study area. Their future involvement in cultural resource inventory programs and interpretation should be sought and incorporated to the fullest extent possible. We might add, other ethnic groups, who presumably entered Woodland during the historic, post-contact era also need to be better understood.

27.0 CULTURAL RESOURCES

SOURCES

1. Woodland General Plan, Historic Preservation Element

2. Opera House, Louis Johnson, 12-28-87

3. Monica Stengart - 12-28-87, Yolo County Historical Museum